

rayjet

Operation Manual

RayjetManager





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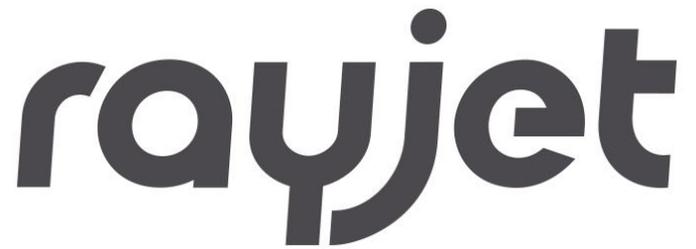
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Technical
Changes

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General

1 General

1.1 Computer Requirements

- **The following recommendation represents the minimum requirements. When using a more powerful computer the graphics are generated and displayed faster and the computing times and the data transfer to the laser are reduced. Please note that due to the rapid rate of change in information technology, we anticipate that hardware and software competencies will be updated on a regular basis.**
- Operating systems: Windows 10®
- Adobe® Reader 9.0 or later
- Local administrative privileges (for required software installations)
- 2 GHz processor or faster
- 2 GB RAM or greater (Windows® 10)
- 80 GB hard drive or larger
- 1024 x 768 resolution monitor or greater
- True color graphics card (24-bit color depth)
- 1 free USB interface
- DVD-ROM drive if installation per DVD

1.2 Installation of the engraver driver

The installation of the printer driver enables communication of the graphics software with the Trotec RayjetManager. This driver is installed automatically during the installation of RayjetManager.

1.3 Installation of RayjetManager Software

- **The RayjetManager software serves for easy operation of your engraver. All functions of the engraver can be controlled, and all settings can be performed from the computer. The permanent communication between JobControl® software and engraver provides for a smooth flow of the operation process.**

General

The following installation instructions give you a short overview over the installation of the RayjetManager software. For detailed instructions on the operation of Windows® please refer to the Windows® user guide.

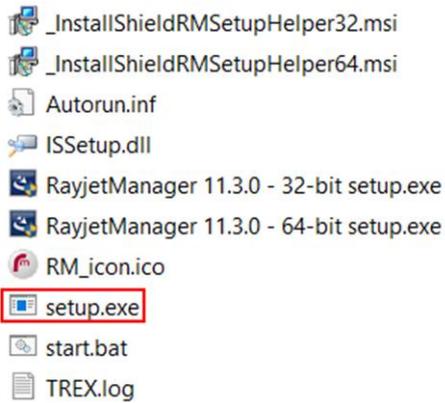
1.3.1 Installation with DVD

1. Start Windows®.
2. Insert the RayjetManager Software DVD into the first DVD-ROM drive.
3. Please switch off installed antivirus programs during installation, please remember to activate them again after installation! Make sure you have administrative privileges.
4. Press "Start" and then on "Run". Press "Browse" and double-click on setup.exe. The program now starts the installation routine and copies all necessary data to the hard disk.
5. This completes the installation. Keep the RayjetManager DVD-ROM in a safe place.

1.3.2 Installation with USB-Stick

1. Start Windows®
2. Plug the USB stick with the RayjetManager software into a free USB socket.
3. Please switch off installed antivirus programs during installation, please remember to activate them again after installation! Make sure you have administrative privileges.
4. Copy the installation data from the RayjetManager to your hard disk, selecting a location where you have administrator rights.
5. To start the setup, press "setup.exe". This program starts the correct setup for your operating system.

General



6. Follow the setup instructions to install the software.
7. Keep the USB stick with the RayjetManager software in a safe place.

1.4 RayjetManager Software Registration

When you launch RayjetManager for the first time, you will be asked to register the software. The registration codes can be found on a printout in the RayjetManager box or on the USB stick in a file that is delivered with the device.

General

Software Registration ✕

Contact your Trotec dealer to apply for registration and enter the received key below.

S.N.: 23-1234

Add key

Current user

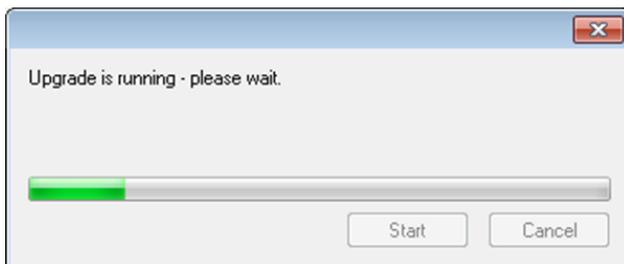
Key	Feature	Level	valid thru
0009999ZZJ0335EB	Activation Key	enabled	unlimited
0009999K48731E8A	View	Expert	unlimited
-	Multi Color Option	-	-

All users

Key	Feature	Level	valid thru
There are no items to show in this view.			

Close

After every code entry the RayjetManager enables the desired module



■ In order to use RayjetManager you will have to enter two codes:

- View code
- Activation code

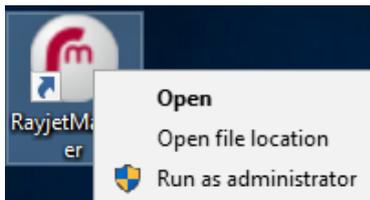
The registration codes are indicated on the document in the RayjetManager box delivered together with the machine:

General

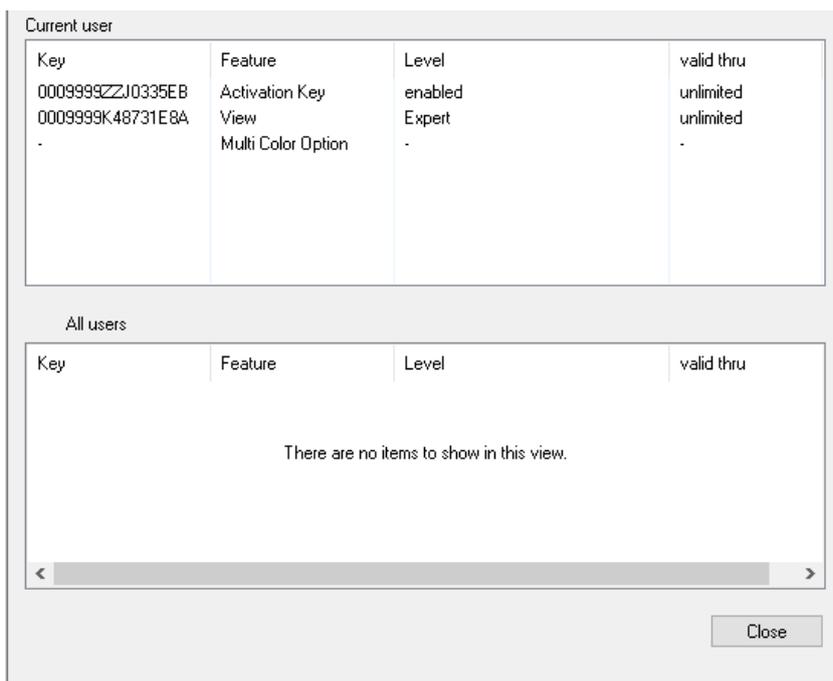
1.5 Share registration keys with other users

With the software registration dialog, it is possible to share the registration keys with other users of the computer where the software is installed. The owner of the key can decide which keys to share.

To be able sharing the keys it might be necessary to start the RayjetManager in administrator mode.



The View and Activation Key were dragged into the "All users" area of the software registration dialog. Now every user can use RayjetManager.



1.6 Compatibility

- For smooth interaction of different Trotec software it is very important to use identical versions. The first two digits must match. Just the last version number is unimportant (X.X.X).

General

Example: MCI-Check 11.3.x needs RayjetManager 11.3.x. Affected software is RayjetManager, Trotec Printer Driver, MCI-Check and UniDrive.

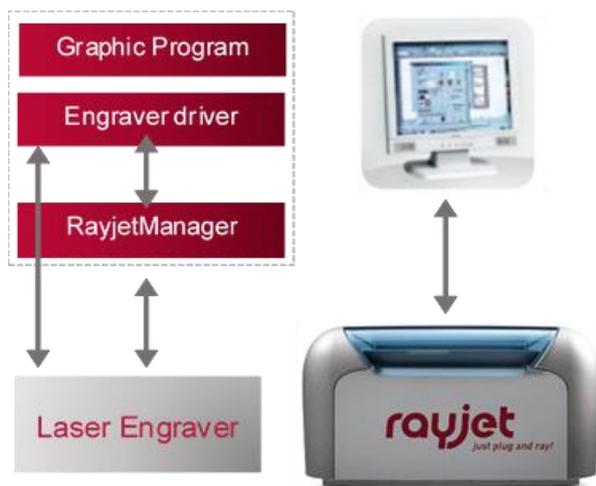
1.7 The Software Concept

The Trotec software package consists of two parts, the

- Trotec Driver (Engraver driver)
- RayjetManager

The Trotec Driver creates a printing job from any graphics program. This printing job contains the graphic data with the selected resolution and information, whether it is a rubber die or an engraving job. In case of a rubber the graphic data is automatically inverted and mirrored, and an optimized cutting line is defined. In the engraver driver you can also select from several pre-defined printing templates (plates) (e.g. Stamp 4911), which essentially simplifies operation. The printer driver places the printing job (file) into a pre-defined directory, which is automatically accessed by the RayjetManager.

In the Trotec RayjetManager the printing job is positioned on a plate and engraved with predefined material parameters. The RayjetManager is responsible for the control of the engraving system. With the new Trotec System you can continuously control the engraving progress and important status messages on the screen of your computer.



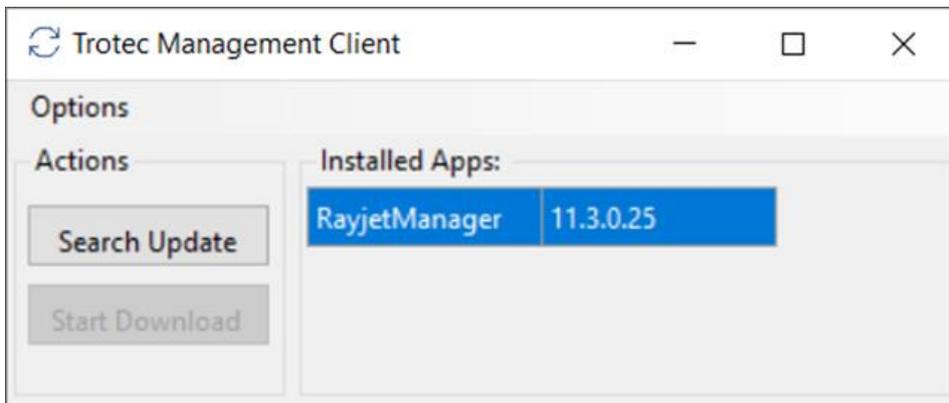
General

1.8 Automatic Software Update

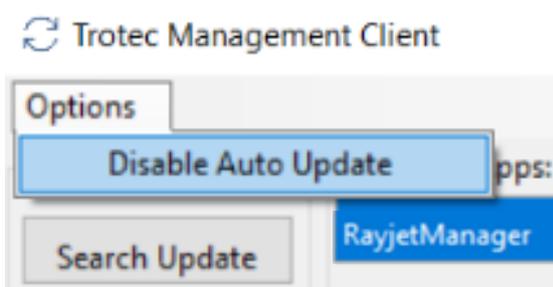
RayjetManager has an automatic update functionality. There is a process running in the background, searching for software updates on our Trotec servers. As soon as an update is found, Windows is notifying you. By clicking on the notice, a small dialog appears which informs you about the current version of your JobControl®.

If the button "Start Download" can be clicked, a new version was found which can be downloaded now by clicking on the button.

Later the setup can be installed.



The functionality can be disabled inside the options menu of the auto update dialog:



Engraver Driver

2 Engraver Driver

The driver transfers the graphic into a legible file for the engraver. The file format for the engraver is *.TSF which stands for **T**rotec **S**pool **F**ile. In addition, all driver settings are saved in this file. Using this information, the engraver knows how to process the job.

The screenshot shows the 'General' tab of the Engraver Driver software. The interface is titled 'Standard' and is divided into several sections:

- Size Settings:** Includes a 'User-defined Size' dropdown, 'Width' (4.331 in), 'Height' (4.331 in), and a 'Rotary Attachment' checkbox.
- Material Settings:** Features two rows of material selection with dropdowns and numerical input fields for parameters like P, V, and U.
- Process Options:** Contains dropdowns for 'Process Mode' (Standard), 'Resolution' (1000dpi), 'Cut Line' (None), and 'Halftone' (OrderedDith). It also includes checkboxes for 'Enhanced Geometries' and 'Inner geometries first', and a 'Shoulder' dropdown set to 'medium'.
- Job Information:** A status bar at the bottom indicates 'The job will be minimized to the minimum possible size.' and includes a 'Quick Print' checkbox.

At the bottom right of the window, there are two large buttons: a red 'M' button and a red 'X' button.

Engraver Driver

2.1 Favorites

It is possible to save printer driver configurations in the favorites archive.

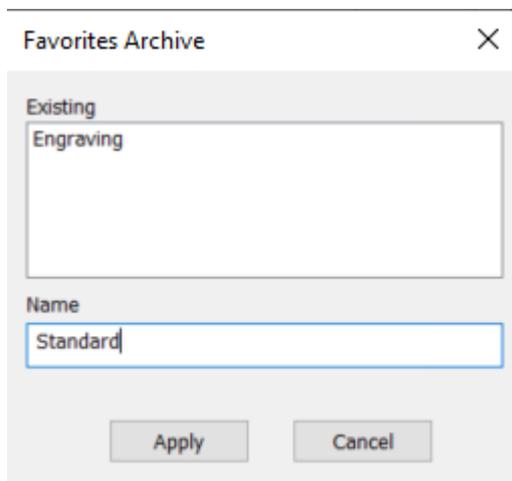
Save printer driver configurations in the print tab.



Engraving

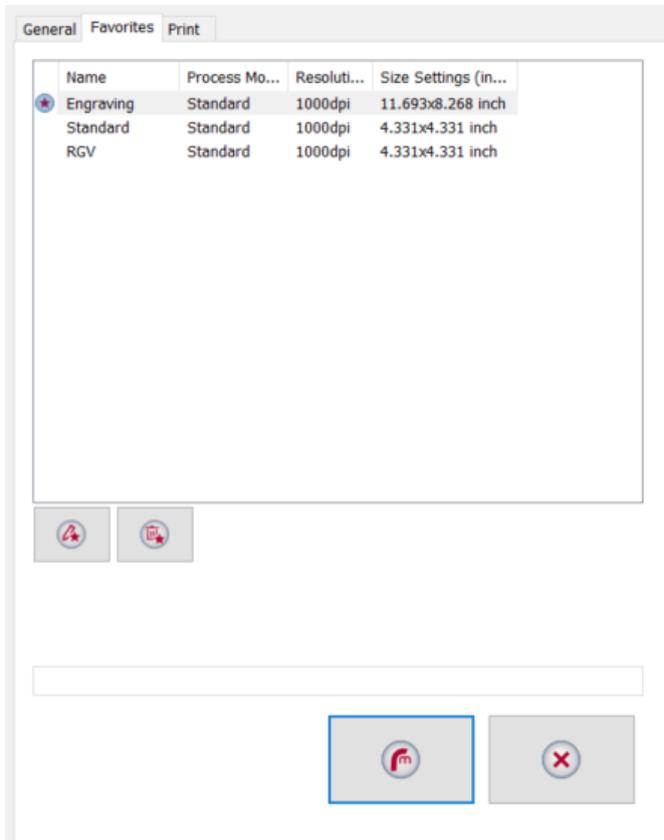


Opens the dialog to load favorites.



Load printer driver configurations in the favorites tab.

Engraver Driver



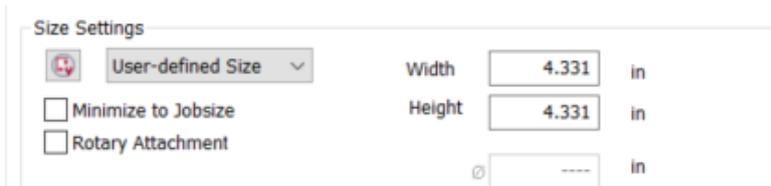
Load the marked configuration.



Delete the marked configuration.

2.2 Size Settings

The selection window allows you to open predefined size templates. This will quickly make frequently used job sizes available.



Engraver Driver

Width, Height

Dimensions of the size template currently opened are displayed either in millimeters or inches (adjustable in the RayjetManager options).

If the entries in these fields are manually changed, the selection window displays “user-defined-size”.



The button left to the Size Templates opens the dialog where new templates can be created, or existing templates can be changed.

Name	Width	Height
A2 landscape	594.00	420.00
A3 landscape	420.00	297.00
A3 portrait	297.00	420.00
A4 landscape	297.00	210.00
A4 portrait	210.00	297.00
A5 landscape	210.00	148.00
A5 portrait	148.00	210.00
classic line P01	50.00	30.00
classic line P02	51.00	38.00
classic line P03	54.00	24.00
classic line P04	54.00	30.00
classic line P05	54.00	34.00
classic line P06	60.00	35.00
classic line P07	60.00	40.00
classic line P08	64.00	45.00

Buttons: New, Delete, OK, Cancel

Minimize to Job size

Printer driver minimizes Print width and height to artwork size.

To use this feature the width and height of the predefined settings template must be larger than the artwork width and height.

Rotary Attachment

Is used to engrave cylindrical work pieces (e.g. glasses) using the rotary engraving facility.

Size Settings

User-defined Size
Circumf. in

Minimize to Jobsize
 Height in

Rotary Attachment
 ∅ in

Engraver Driver

The display of size/width is changed to circumference. The driver automatically calculates the work piece's circumference using the diameter entered and uses this circumference as new job width. This behavior is very well illustrated in the print preview of the graphics program.

2.3 Material Settings



 With this button the material database can be opened. In it the material groups are structuring the materials. New materials and groups can be generated. There are 16 process colors to choose from. The two most common process colors are shown next to the control buttons. While black is traditionally used for engraving, red is used for cutting.

 Shows the laser power in % of the max power.

 Shows the velocity in % of the max velocity.

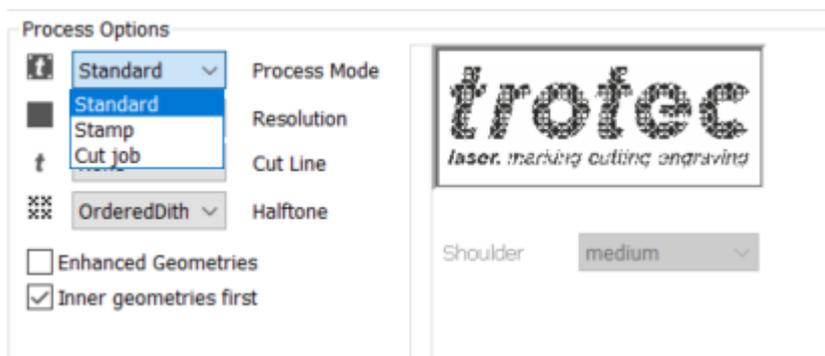
 Shows the pulse per inch in engraving processes or Hz in cutting processes.

Engraver Driver

2.4 Process Options

2.4.1 Process Mode

The printer driver offers 3 process modes. These modes will change the parameter set in use. From which process modes one can choose depends on the selected engraver. Also the parameters will change with the selected engraver.



The following process types are available:

Standard



Is used for a large number of engraving and cutting jobs.

Depending on the material settings (see 0) and process options used, one or several design colors may be used for engraving or cutting.

Stamp



Is used for creating stamp text plates mainly made of rubber materials that can be engraved by a laser.

The data is automatically mirrored and inverted as it is required for the production of stamps.

Engraver Driver

In general, black is the recommended design color for this processing. When using color or gray-scale graphics, an automatic raster (conversion into black-and-white graphics) is performed.

The engraving color in the stamp process is always black. Depending on the material settings (see 0) used, any color is allowed for the cutting lines.

Cut Job



With this processing type the parameters are made ready for cutting. Additionally all elements inside the picture that are no cutting lines are eliminated. This makes the job smaller and faster.

2.4.2 Resolution

Selection of the required resolution in dpi (dots per inch). Equivalent to the lines to be engraved per inch (25.4 mm).

A higher value improves the engraving quality but results in increased engraving depth and longer engraving time using otherwise identical parameters as the laser has to process accordingly more lines.

Setting range: 125, 250, 333, 500, 600, or 1000 dpi

The setting for standard engraving should be 500 dpi. The resolution to be selected largely depends on the material used as well as on the focal length of the lens.

2.4.3 Cut Line

Selection of automatically created cutting lines.

Engraver Driver

The type of the selected automatic cutting line is displayed as a symbol in the preview.



None – no automatic cutting line will be created



Rectangular – a cutting line will be created which follows exactly the job margin (size)



Circular – a circular cutting line will be created whose size is determined by the job size



Optimized – a cutting line will be created which adjusts to the contour of engraving contents. This reduces the dimensions of a stamp job to the required minimum measure without losing contents. This allows reducing the material required.

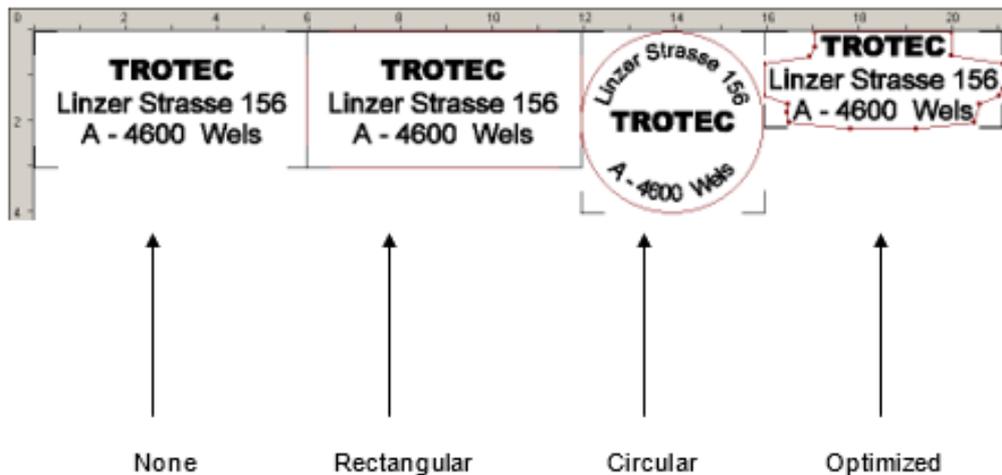
■ **Please note the following points:**

- Cutting lines must always be vectors.
- Automatically created cutting lines are always red (second color in the material menu; R=255, G=0, B=0).
- When using automatic cutting lines, red must be activated as the cutting color and provided with suitable parameters.
- Automatically created cutting lines have no influence on any manual cutting lines (vectors) in the file.
- The driver setting "Cutting line: none" does not lead to a suppression of manually created cutting lines.

Engraver Driver

- The driver setting "Cutting line: none" does not lead to a suppression of manually created cutting lines.

Types of automatic cutting lines



2.4.4 Halftone

Halftone = Conversion of grayscale or color images into black-and-white images creating the impression of a gray-scale image through different dot sizes and dot pitches.

Halftone is not available in Relief and Layer processing types as these processes require gray-scale graphics and therefore half toning is not desirable.

Ordered Dithering

Standard halftone setting, soft contrasts between the brightness gradients

Stucki, Jarvis, Floyd Steinberg

Advanced Dithering algorithms for photo engraving

Color

Deactivates half toning by the driver.

Is used when several engraving colors are to be employed or half toning has already been performed in the application program. "Color" is not available in the Stamp Mode as black-and-white graphics are always required for creating stamps.

Engraver Driver

Black & White

Threshold level is used to decide if printed pixel will get black or white.

2.4.5 Checkboxes

Enhanced geometries

Vector data of the printed job contains vectors and arcs which improves the accuracy of round contours significantly. The drawing application must provide Bezier curve output for the printer driver to use this feature.

- This setting is automatically activated when a registration mark job is printed. This requires that at least one color is defined as a registration mark in the Material Settings.

Inner geometries first

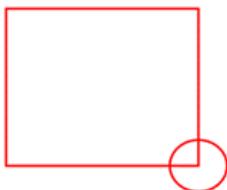
This parameter will bring the cutting lines inside the artwork into a new order if the ordering requirements are fulfilled. This means that the geometries built by vectors are only sorted if the geometries are clearly nested. If the case is not clear, the geometries will stay in the order given by the graphics application.

- Example for a clear case:



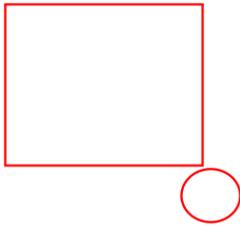
The circle rests inside the rectangle. The geometries can be sorted and cutting will start with the circle.

- Example for an unclear case:



It is not clear which object lies inside which one. The geometries will not be sorted.

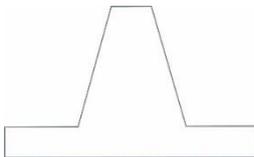
Engraver Driver



The objects lie next to each other. The geometries will not be sorted.

Stronger than the principle of position is the principle of color. Therefore the vectors will be separated by color inside the *.tsf file.

Shoulder



Only activated in the Stamp process. The available options of shoulder types are steep, medium, flat and other, user definable, shoulder settings.

Shoulders are used to give letters and characters of a stamp text plate more stability at the base.

2.5 Control Functions



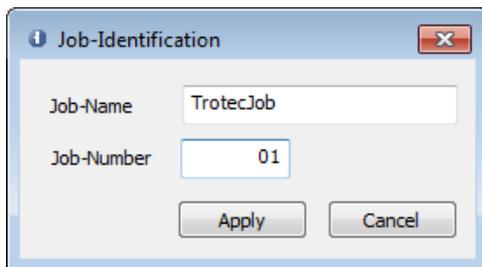
Quick Print

If you select the Quick Print check box, jobs will be printed without job name and job number query, automatically positioned on the plate in the RayjetManager and the engraver will start. The job will be deleted once the engraving is completed. This allows a largely automated manufacturing process and reduces the required user actions to a minimum.

Engraver Driver

- If engraver is not turned on, it is not possible to automatically process a Quick Print job.
The job will be put into the job queue.
- A job name and an optional job number must be entered at the end of the print settings. < >
“ / ? | ; \ : must not be used in the job name.

The job created will be saved with this name and number and copied to RayjetManager where it will be displayed in the queue.



The screenshot shows a standard Windows-style dialog box titled "Job-Identification". It features a title bar with an information icon on the left and a close button on the right. The main area contains two labeled text input fields. The first field, labeled "Job-Name", contains the text "TrotecJob". The second field, labeled "Job-Number", contains the text "01". At the bottom of the dialog, there are two buttons: "Apply" and "Cancel".

Material Database

3 Material Database

3.1 Overview



With this Button the material database can be opened inside JobControl® and Printer Driver. Inside the database the material to be used for the job is chosen.

You can use predefined material settings to achieve the best engraving and cutting results. Trotec supplies many standard materials that can easily be updated. New materials can also be added. For a better overview, materials are clustered into material groups.

Standard \ Standard

Thickness: 0.079 in

Description:

Color	Process	Power	Speed	PPI/Hz	Auto	Passes	Air Assist	Z-Offset	Direction	Advanced
1	Engrave CO2 ...	50.00	100.00	500 PPI	<input type="checkbox"/>	1	On	0.00	Top down	Custom
2	Cut CO2 RF	50.00	2.00	3000 Hz	<input type="checkbox"/>	1	On	0.00	---	Custom
3	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
4	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
5	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
6	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
7	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
8	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
9	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
10	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
11	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
12	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
13	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
14	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
15	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
16	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---

Create material group (gear icon)
 Configuration (plus icon)
 Create material (plus icon)

Save changes (OK button)
 Discard changes (Cancel button)

Material Database

3.1.1 Process

Defines, for which process mode the color is intended. To print a job successfully, the colors have to match the needed Process type before printing the job. If the process mode is incorrect, vector data may be interpreted as halftone data and vice versa. To increase processing performance, skip unused colors in the material settings.

Engrave, Engrave CO2 DC, Engrave CO2 RF

The color displayed in this line will be engraved; e.g., fills with this color are processed line-by-line using the parameters set.

Vector objects in this color will be ignored.

Cut, Cut CO2 DC, Cut CO2 RF

The color of this line is only for vectors - for cutting.

Vectors (line width of 0.001 mm or 0.00005 inches) drawn in this color are executed using the laser parameters set.

Fills of the same color will not be processed.

Positioning

Color will be shown in the WYSIWYG view but is not going to be processed. This works as a positioning help e.g. to draw & print object frames

Skip

Any occurrence of this color in the job will not be considered with either fills or vectors.

3.1.2 Power

Percentage of the maximum laser power. The engraving depth depends basically on the laser power and speed set. Increased power as well as decreased speed results in deeper engraving or cutting.

Adjustment range: 0-100% (100% is equivalent to the maximum power of the laser).

Material Database

3.1.3 Speed

Percentage of the maximum speed. Important: Cutting speed percentage relates to maximum engraving speed. This means that if your laser machine has a maximum engraving speed of 355 cm per second, setting of 1 % means 3.55 cm per second cutting speed.

3.1.4 PPI

Pulses per inch (laser pulses per inch). This setting determines the number of laser pulses per inch emitted by the laser. This occurs depending on the position, e.g. the pulses are always emitted at the same interval irrespective the speed.

Adjustment range: 500 - 1000 PPI

Auto Setting calculates optimum PPI settings automatically.

- **To obtain a good result, the PPI value must be usually larger than or at least the same as the dpi setting of the printer driver (Process options – Resolution), e.g. a minimum value of 500 PPI should be selected for a resolution of 500 dpi. Unlike the resolution in dpi, increase in PPI does not have an effect on the engraving time.**
-

3.1.5 Hz

Frequency of laser pulses during cutting. This setting determines the number of laser pulses per second emitted by the laser.

Adjustment range: 1000 - 60000 Hz for CO2 systems

3.1.6 Auto

Auto Setting calculates PPI or Hz Settings automatically.

3.1.7 Passes

This value defines how often a color will be repeated. Repetition passes work for engraving and for cutting processes...

Material Database

3.1.8 Air Assist

Allows activation and deactivation of the (optional) air injection for each color separately.

3.1.9 Z-Offset

Controls the Z-axis (table) during processing. This allows e.g. to engrave in focus or refocus work pieces with different height Levels. At the end of processing the table is brought in the same position it was before start. Values are possible from -5 mm / -0,197" (up) to 25 mm / 0,984" (down).



Not all machines support an automatic Z-offset!

3.1.10 Direction

The engraving of a job can be done from the top to bottom or from the bottom to the top and alternating starting either in the front or in the back.

This process is helpful on some materials (e.g. laser able plastics or wood) and reduces time and efforts for cleaning.

Color	Process	Power	Speed	PPI/Hz		Auto	Passes	Air Assist	Z-Offset	Direction	Advanced
1	Engrave	20.00	10.00	20000 Hz		<input type="checkbox"/>	1	On	0.00	Top down	Default
2	Cut	20.00	10.00	20000 Hz		<input type="checkbox"/>	1	On	0.00	Top down	Default
3	Skip	---	---	---	---	<input type="checkbox"/>	---	---	---	Bottom up	---
4	Skip	---	---	---	---	<input type="checkbox"/>	---	---	---	Top down (Alternat	---
										Bottom up (Alternat	---

Top down: From the back to the front

Bottom up: From the front to the back

Top down (alternating): The beginning position alternates but starts at the back for the first time.

Bottom up (alternating): The beginning position alternates but starts at the front for the first time.

Material Database

3.1.11 Advanced

Most functions described herein can be globally set in the JobControl® configuration menu. Settings in this configuration menu have priority. This means that any functions activated in the configuration menu cannot be deactivated in the advanced material settings. However, it is possible to add functions as described below.

Correction	<input type="text" value="10"/>
Links	<input type="checkbox"/>
High Quality	<input type="checkbox"/>

Correction

Determines the minimum percentage of laser power of the selected laser power which is set during slow movement; for example around curves in vector mode or acceleration phase during engraving mode.

Vector mode:

If the setting of this value is too small, the lines will thin at the ends and in the radius or disappear completely. If the selected correction is too high, the width will strongly increase at the line ends and radius.

Engraving mode

If the setting of this value is too small, the borders of the engraved image disappear or get less ablated because of material or laser nonlinearity.

If the selected correction is too high, the borders of the engraved image get more ablated than the center of the image.

First step before using correction value is to identify correct power value:

- Start with correction value zero.
- Choose the engraving width that maximum velocity is reached. Engraving width should be more than 400 mm when velocity is 100 percent.
- Adjust the correction value until the desired appearance is constant over the full engraving width. Correction value 15 is a good choice very often.

Material Database

- **Links**

Activates the link function for the used color. If links are activated globally in JobControl® configuration menu this setting is ignored.

Links are small uncut bridges between cut lines which prevent the work piece from falling through the work plate. Links are mostly used for cut lines for rubber stamps. General link settings can be defined in JobControl® configuration menu.

- **High Quality**

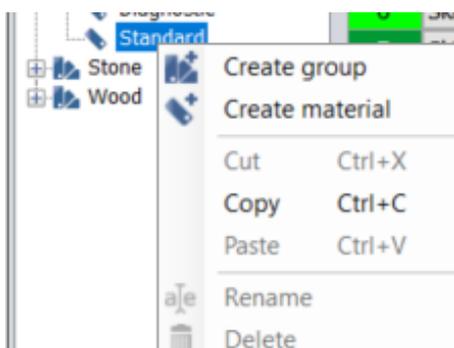
Color is processed with high quality mode which means every engraving line has the same length. This setting can lead to significantly increased processing time.

3.2 Create material group

Add a new material group to your material database using either the create material group button, with a right mouse click or a shortcut. Give a name and hit enter. Material group is now saved and you can now add materials to this new group.

3.2.1 Hierarchical material groups

There is also the possibility to create a material group inside a material group. This works only for a depth of 1, which means that a group inside a group cannot have groups underneath.



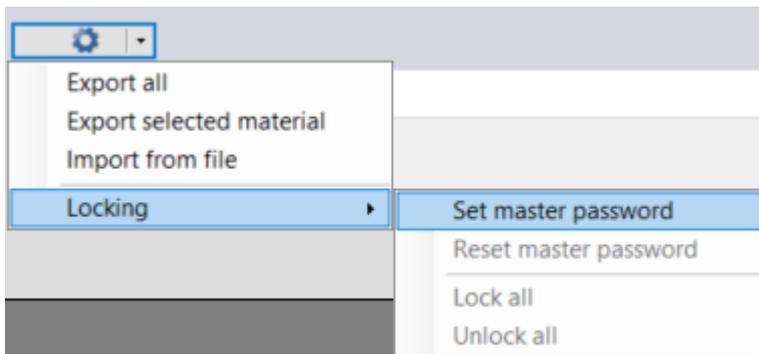
Material Database

3.3 Create / rename / delete material

Add new materials to your material database using either the create material button, with a right mouse click or a shortcut. You can either start with a blank material page or copy – paste existing materials and change parameters afterwards. Materials can be renamed and deleted using the right mouse click.

3.4 Lock material

Materials can be prevented from changes by locking them. To do this, you must first set a master password (Configuration – Locking – Set master password). RayjetManager now switches into the Admin Modus.



Material Database

Standard \ Standard Admin mode

Thickness: 0.079 in

Description:

Color	Process	Power	Speed	PPI/Hz	Auto	Passes	Air Assist	Z-Offset	Direction	Advanced
1	Engrave	50.00	100.00	500 PPI	<input type="checkbox"/>	1	On	0.00	Top down	Custom
2	Cut	50.00	2.00	3000 Hz	<input type="checkbox"/>	1	On	0.00	---	Custom
3	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
4	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
5	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
6	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
7	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
8	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
9	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
10	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
11	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
12	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
13	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
14	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
15	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---
16	Skip	---	---	---	<input type="checkbox"/>	---	---	---	---	---

Export all
 Export selected material
 Import from file
Locking ▶
 Switch to normal mode

Set master password
 Reset master password
 Lock all
 Unlock all

Now you can lock or unlock materials, material groups or the complete database. Any materials locked are indicated with a lock.

If requested, you can change from admin to normal mode via the material configuration button.

Export all
 Export selected material
 Import from file
 View ▶
 Color order ▶
 Locking ▶
Switch to admin mode

Material Database

3.5 Material Settings

Within material database you can choose or edit material settings for different materials and applications.

Thickness

Displays the thickness of material either in millimeters or inches.

The value is used optionally to focus on the material surface via RayjetManager using the automatic focus mode

Description

If required, text may be entered for each material here, such as supplier, order number, or processing information. (Line feed using Ctrl + Enter key)

Color

There are 16 different colors available which can be adjusted for different processes with different settings.

Move with the mouse over one of the color boxes to display the RGB color components (red/green/blue) at the bottom of the color column.

In addition, a CorelDraw® color palette specifically matched for Trotec lasers can be found on the installation DVD.

By setting the appropriate parameters, an area of application can be assigned to each color, for example black for engraving bitmaps, red for cutting vectors and blue for comments.

Engraving Process Colors are done first and then Cutting Colors are executed. Processing priority within the same process (Engraving or Cutting): Color 1 then Color 2 then Color 3...

Color	Process	Power	Speed	PPI/Hz		Auto	Passes	Air Assist	Z-Offset	Direction	Path planning	Advanced
1	Engrave CO2	20.00	10.00	500 PPI		<input type="checkbox"/>	1	On	0.00	Top down	---	Default
2	Cut CO2	20.00	10.00	1000 Hz		<input type="checkbox"/>	1	On	0.00	---	Throughput	Default
3	Skip	---	---	---	---	<input type="checkbox"/>	---	---	---	---	---	---
4	Skip	---	---	---	---	<input type="checkbox"/>	---	---	---	---	---	---

Example: Proceeding sequence: Black (Color 1), Blue (Color 3), Red (Color 2), Blue (Color 4)

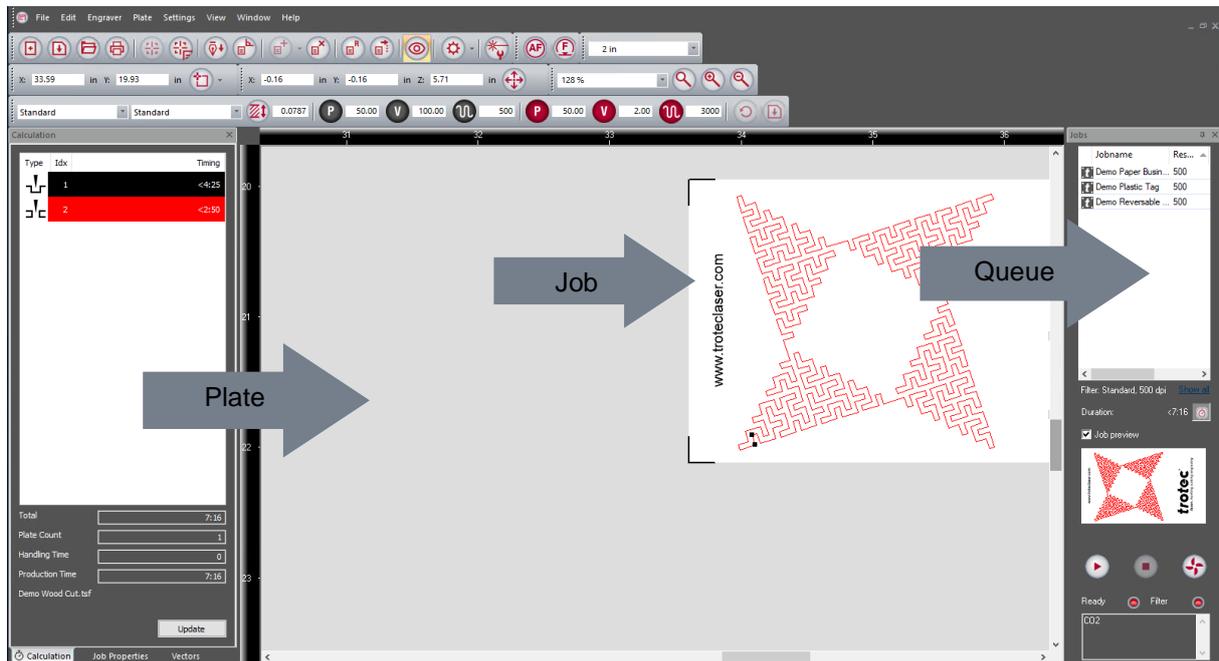
Operation RayjetManager

4 Operation RayjetManager

4.1 Overview

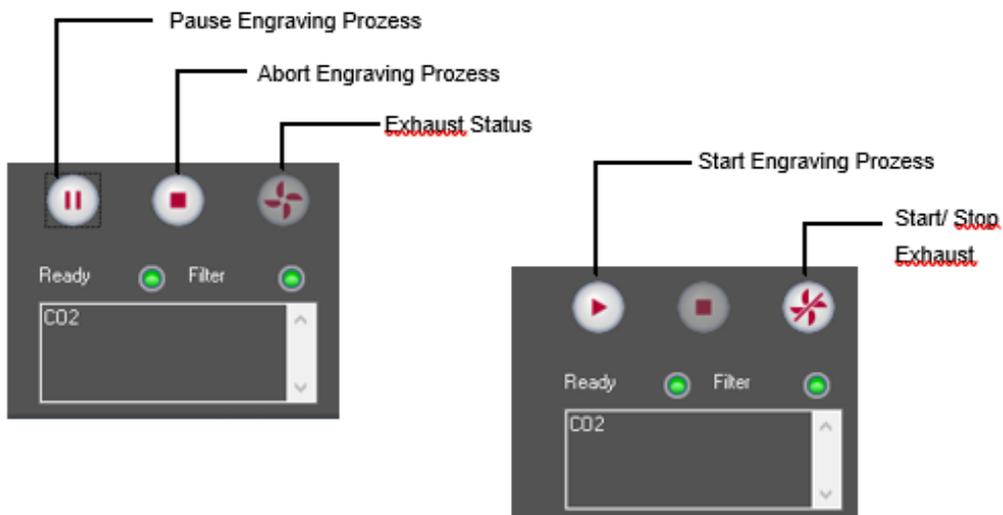
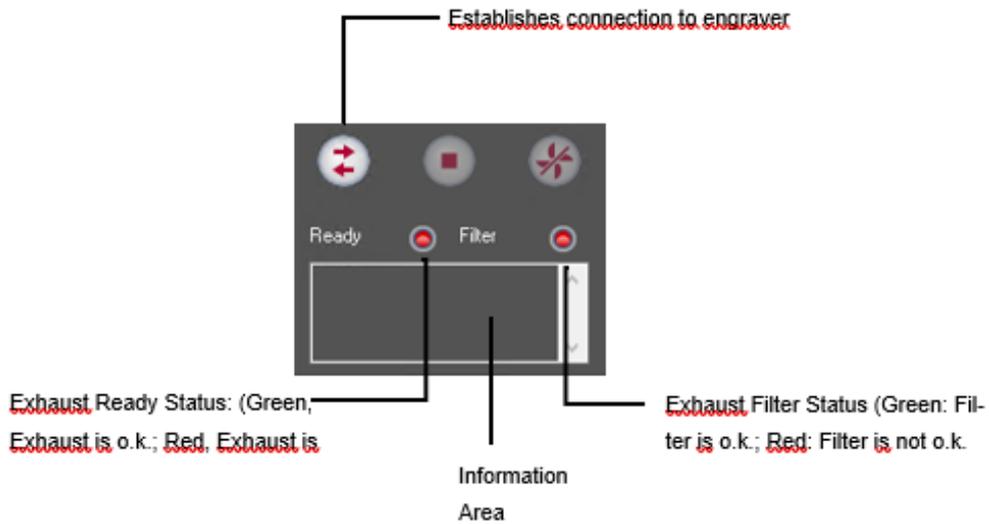
The RayjetManager carries out the following main tasks:

- Managing the jobs created by the driver
- Precise positioning of the jobs
- Transferring the jobs to the engraver
- Visualizing responses from the engraver
- Acquiring job and engraver data
- Controlling the engraver parameters
- Managing the material templates
- Archiving engraving jobs



Operation RayjetManager

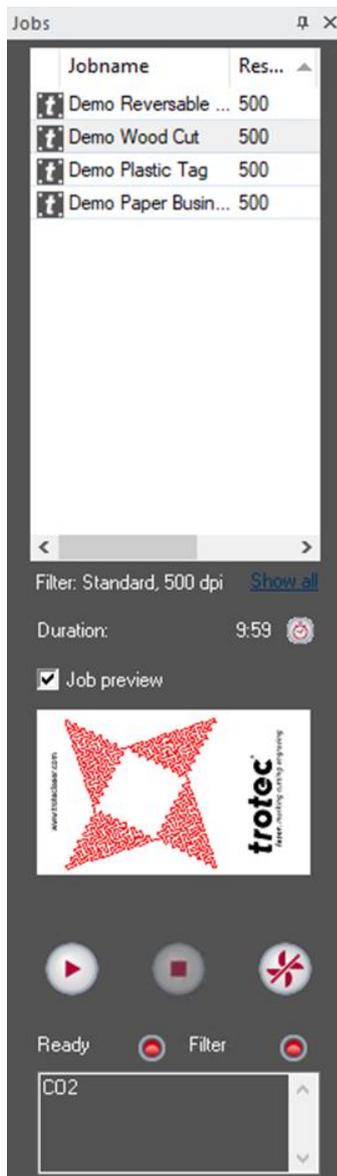
4.2 Laser Control Functions



Operation RayjetManager

4.3 Job Preview

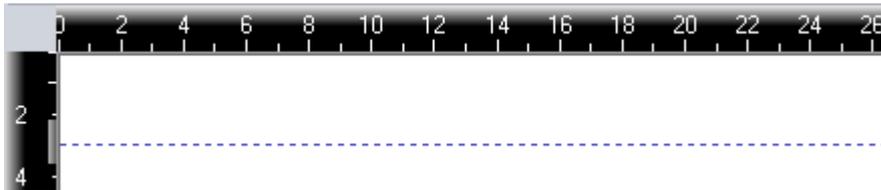
Checkbox and frame for showing a small picture of the above or on plate selected job.



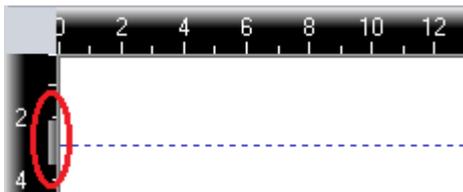
Operation RayjetManager

4.4 Drag snap lines

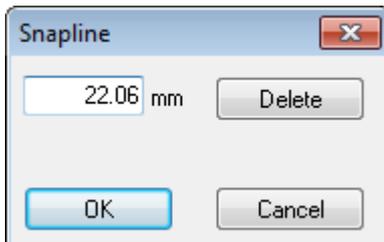
To create a snap line click with the left mouse button on one of the plate rulers (x or y) and hold the click and drag the line over the plate. Drag once positioned snap lines by moving the mouse pointer across the snap line.



Configure snap lines: To delete or configure snap line double-click on snap line Rectangle within red circle



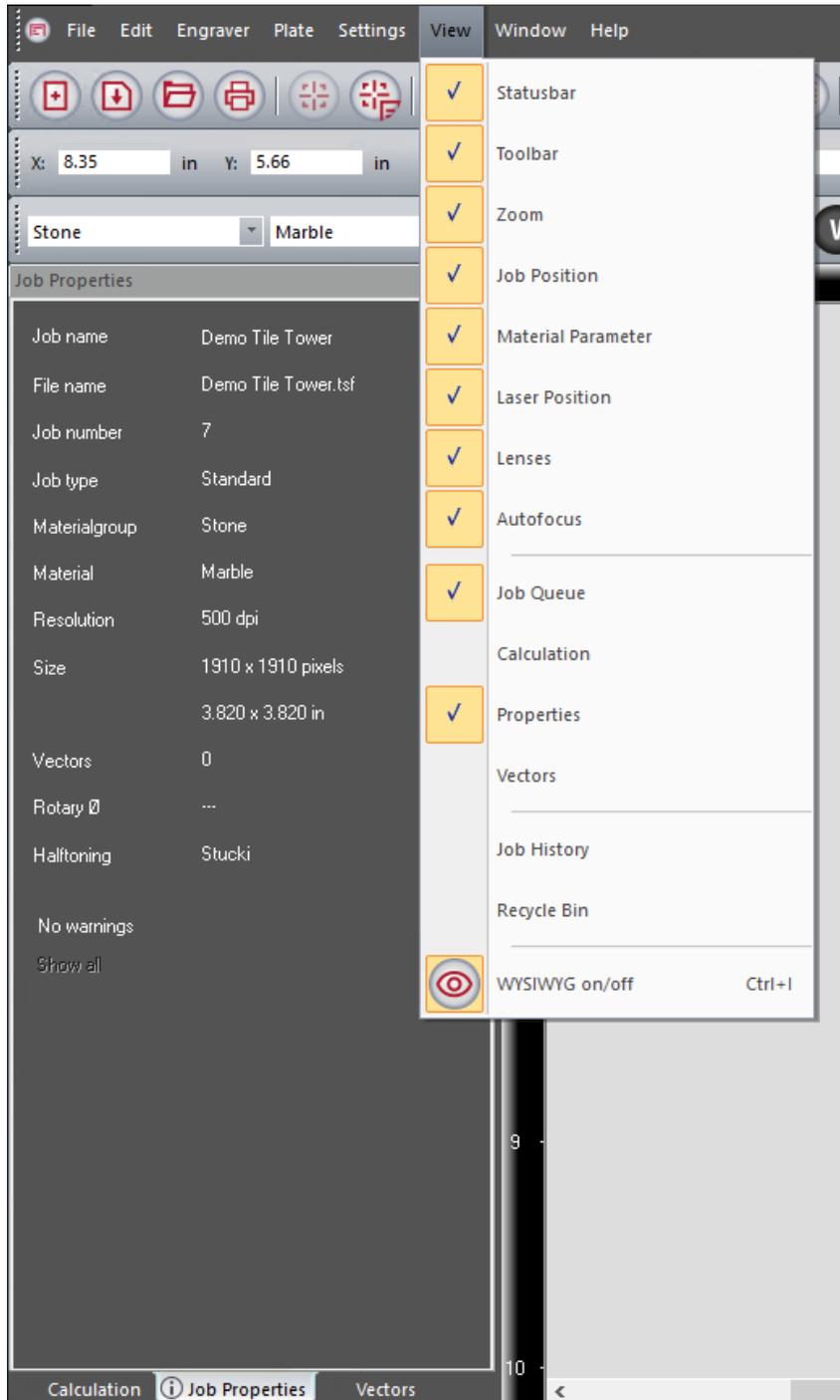
Now you can move or delete the snap line



Operation RayjetManager

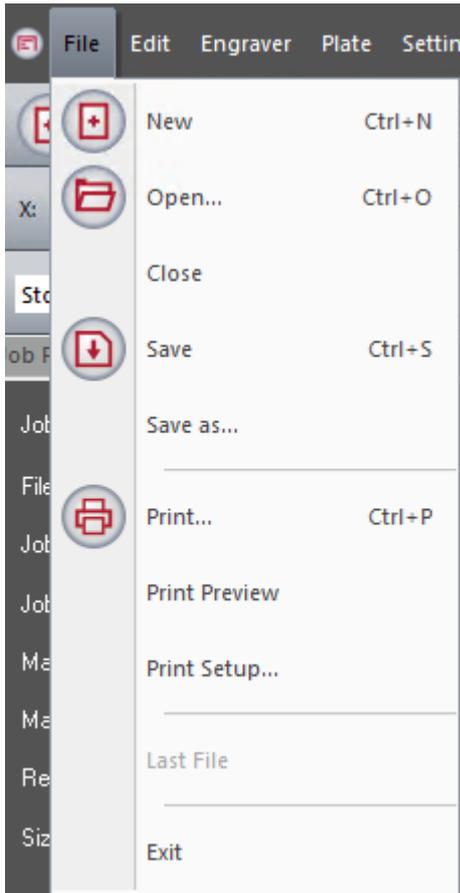
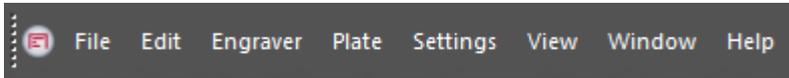
4.5 Side Bar

On the left side of the plate you can dock the side bar which shows tabs for various job information like properties, vectors or process time calculation:



Operation RayjetManager

4.6 File



New Ctrl+N): Creating a new material plate.

Open Ctrl+O): Opening saved material plate.

Close: Close the current plate.

Save Ctrl+S): Save the current plate with all jobs.

Save as: Save the plate with a new name.

Print Ctrl+P): Printing plate Proof reading.

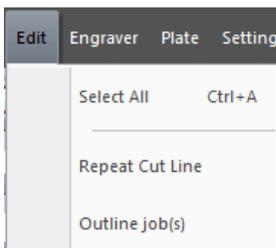
Print Preview: Print Preview for printing.

Print Setup: Setting up the printer.

Last File: Opens the most recently used plate.

Exit: Exits the Trotec JobControl®.

4.7 Edit



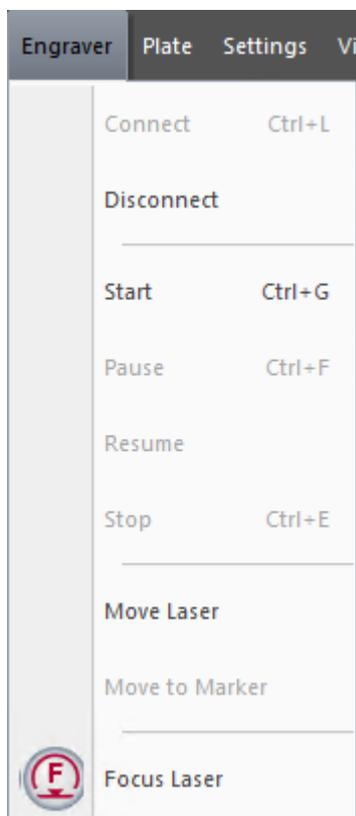
Operation RayjetManager

Select All Ctrl+A: Selecting all jobs on the plate.

Repeat Cut Line: Re-cutting of the selected job if the cutting line is not completely sufficient.

Outline Job: The bounding contour of the job is processed in cutting mode without laser power. The velocity of the outline can be defined in the options menu. Helps to check in advance the correct positioning of materials and/or job.

4.8 Engraver



Connect Ctrl+L : Establishes a connection with the engraver attached.

Disconnect (for Basic, Advanced, Expert): Cuts established connection with engraver.



Start Ctrl+G : Starts the engraving or cutting process.

Pause Ctrl+F : Pauses the engraving process.

Resume: Continues the interrupted engraving process.



Stop Ctrl+E : Stops the engraving process.

Move Laser (for Expert): Adjusts the marking head to the position specified

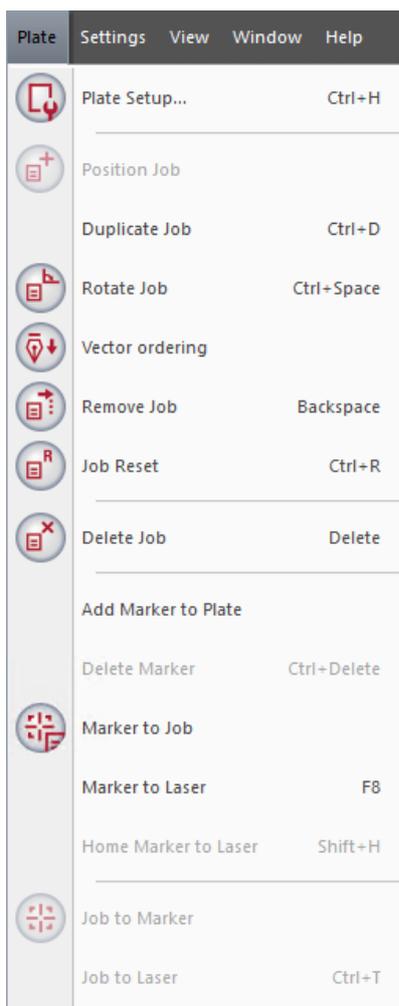
Move to Marker (for Expert): Adjusts the marking head to the position of the selected marker. (How to set Marker - see Section 0 - Plate).

Operation RayjetManager

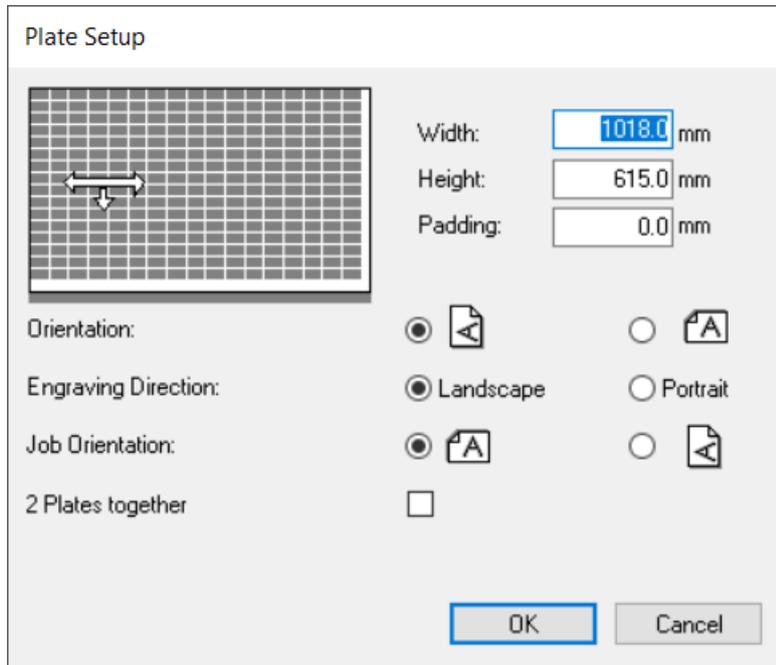
Autofocus : Table moves in focus position to the saved thickness of the currently selected material.

4.9 Plate

- The Plate Setup dialog is used to customize the plate size, orientation, and material definition for the job being processed.



Operation RayjetManager



Padding: Defines the distance between the jobs when positioned on the plate by double click

Orientation: Determines the orientation of the plate (Portrait or landscape)

Engraving Direction: Defines whether the lines are engraved in horizontal or vertical direction during engraving.

Job Orientation: You can select whether the jobs are positioned in portrait or landscape mode. It is advantageous to engrave jobs in the direction of their longest side as the engraving time will be reduced if the engraver has a minimum of interruptions.

Plates together: If this option is selected, two plates are positioned side by side and displayed in the JobControl® using a separator.

Operation RayjetManager

4.9.1 Job Positioning

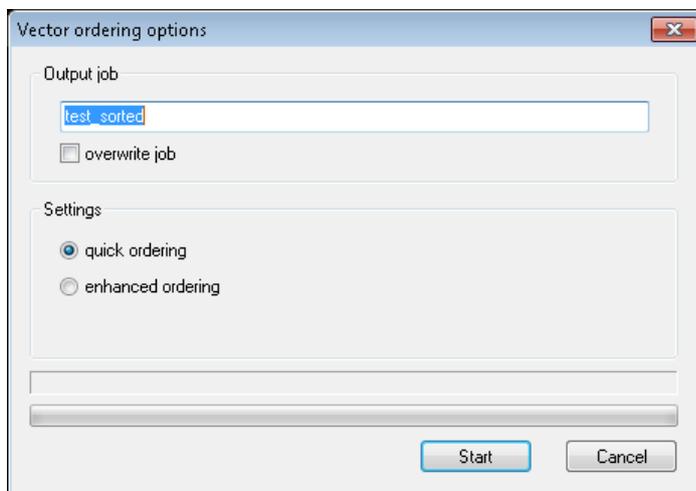
Position Job: Positions the job(s) marked in the queue on the plate. Select the job you want by clicking once on the job name in the queue. The job is highlighted in color and can now be positioned. It is also possible to position multiple jobs at one time this way. As an alternative solution to position jobs on the plate, you can double click on the appropriate job name or drag the job onto the plate using the mouse.

Position Job Multiple: Multiple positioning of the selected job. This function allows multiple positioning of selected jobs in the queue on the plate up to 100 times.

Duplicate Job: Duplicates a marked job in the queue or on the plate.

4.9.2 Ordering of Vectors

Vector ordering: Re-orders all vectors within a job file to achieve way-optimized processing. This reduced cutting times.



Quick ordering is a very fast and easy to use method.

Of course, more complex jobs, with a higher number of vectors may require the enhanced ordering method. But bear in mind that the enhanced method is more time consuming.

Enhanced ordering takes two parameters.

Operation RayjetManager

Mutation is the number of randomly different copies of the job - each job with another vector order. After creation of n mutations, mutation 1 is compared with mutation 2 ... n, mutation 2 is compared with mutation 3 ... n, and so on.

The most optimized mutations are used to create n new mutations. This is repeated for the number of Passes.

Vector ordering is only functional when the number of vectors is in the range from 3 to 5000.

Inner geometries first → chapter 2.2.5

The cancel button takes only effect between the mutations, before starting a new pass! That is why it does not always react immediately.

4.9.3 Jobs

Rotate Job  **Ctrl + Space**: Rotate positioned jobs via the context menu or use the toolbar button. Rotation is always 90° (-90° if applied to already rotated jobs).

Remove Job:  Puts the job back in the queue.

Click on the job you want to select and remove it from the plate

Job Reset:  Resets the job properties

Is required to engrave jobs being already completely processed again, Select the job processed on the plate and then execute "Job Reset.

Delete Job  **Del:** Deletes the selected job(s) in all files. This allows you to delete jobs regardless of whether they have already been processed or not. Click on the job on the plate or in the queue and then on "Delete Job.

4.9.4 Marker

Add Marker to Plate (for Expert): Sets a marker on the specified position.

Operation RayjetManager

Markers are displayed as blue crosses on the plate (selected markers are green). Markers are used as positioning aids for jobs. They have magnetic properties in that they are attracted to the corners or the center of the job. The snap feature can be ignored with pressed ALT Key during Job Repositioning with the Mouse.

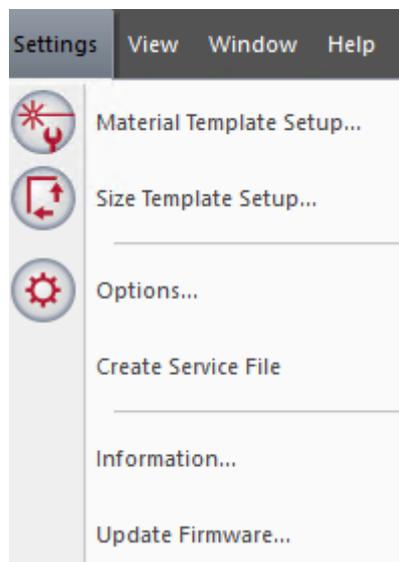
Delete Marker Ctrl+Del: Deletes the selected marker.

Job to Marker:  Moves selected job to the selected marker

Marker to Job:  Sets a marker on the position of the selected job or moves a selected marker to the position of the selected job

Marker to Laser F8 : Sets a marker on the current laser position

4.10 Settings



4.10.1 Templates

Material Template Setup 

Creating, changing and deleting of material templates. See chapter Material Database for Details

Operation RayjetManager



Size Template Setup

Name	Width	Height
A2 landscape	594.00	420.00
A3 landscape	420.00	297.00
A3 portrait	297.00	420.00
A4 landscape	297.00	210.00
A4 portrait	210.00	297.00
A5 landscape	210.00	148.00
A5 portrait	148.00	210.00
classic line P01	50.00	30.00
classic line P02	51.00	38.00
classic line P03	54.00	24.00
classic line P04	54.00	30.00
classic line P05	54.00	34.00
classic line P06	60.00	35.00
classic line P07	60.00	40.00
classic line P08	64.00	45.00

Buttons: New, Delete, OK, Cancel

Creating, changing and deleting of size templates

Click on a template in the list to select. Settings such as Name and Dimensions may then be changed and saved by clicking on the "OK" button.

To create a new size, click on the "New" button, make the settings, and then save them.

Click on the "OK" button to have the new settings take effect. Click on "Cancel" to undo unwanted changes.

The Define Size Template dialog allows saving of frequently recurring sizes in order to retrieve these from the printer driver.

4.10.2 Options

Information about the options can be found in the section "Options Dialog".

4.10.3 Create Service File

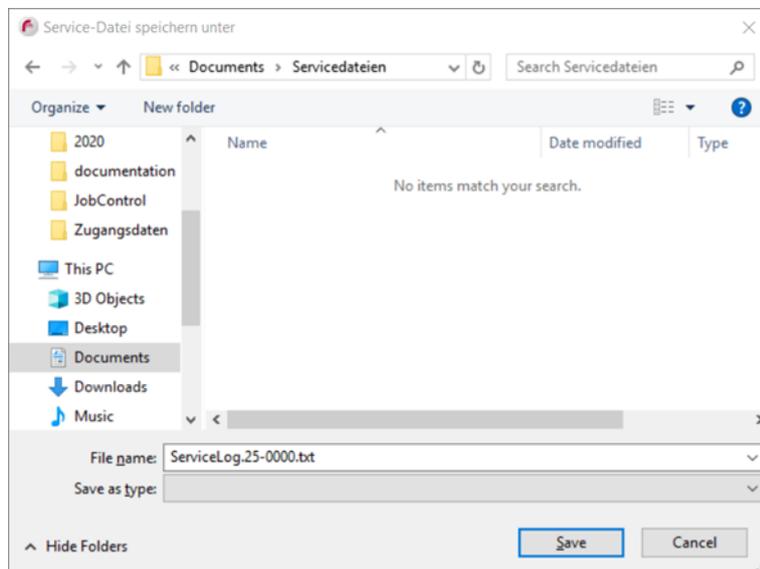
Operation RayjetManager

Creates information file (.TSI) of the laser software

In the case of unexpected software problems, this function is used to create a file which allows analyses performed by Trotec Technical Support. This file contains: Material and size templates, laser settings, positioned engraving jobs, and the Trotec software as well as operating system version number. Graphics data may also be included.

Functionality:

Position the job(s) causing problems on the plate. Open Create Service File dialog.



Select path for the service file and click on Save.

If required, you may then attach a graphics file or any other related file.

Select the graphics file used for creating the job and click on Open. Click on Cancel if you do not want to attach a graphics file.

The service file will then be automatically saved in the previously selected path. This file (ServiceLog.txt) should be sent by email or on a disk to Technical Support together with a description of the problem.

4.10.4 Information

Operation RayjetManager

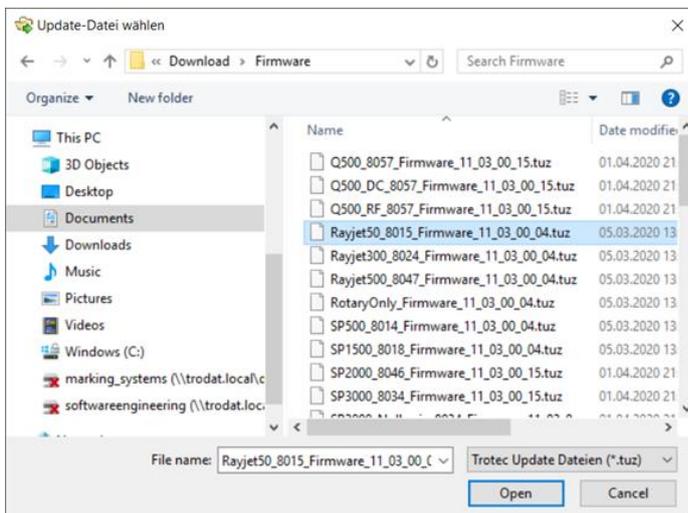
Shows travel and operating time of the laser as well as engraver model and engraver software version.

In order to retrieve this information, the connection to the engraver must be established.

4.10.5 Update Firmware

You are prompted to specify the storage location of the Trotec update file (.TUZ). Then the settings are changed on the laser engraver itself.

Updating of the engraver software is not permitted unless you are instructed to do so by the Trotec Technical Support.



Choose Firmware File. Connect to Engraver (machine must be started with open top cover, or referencing has been finished) Press Send to process Firmware Update.

Operation RayjetManager



NEVER ABORT FIRMWARE UPDATE!

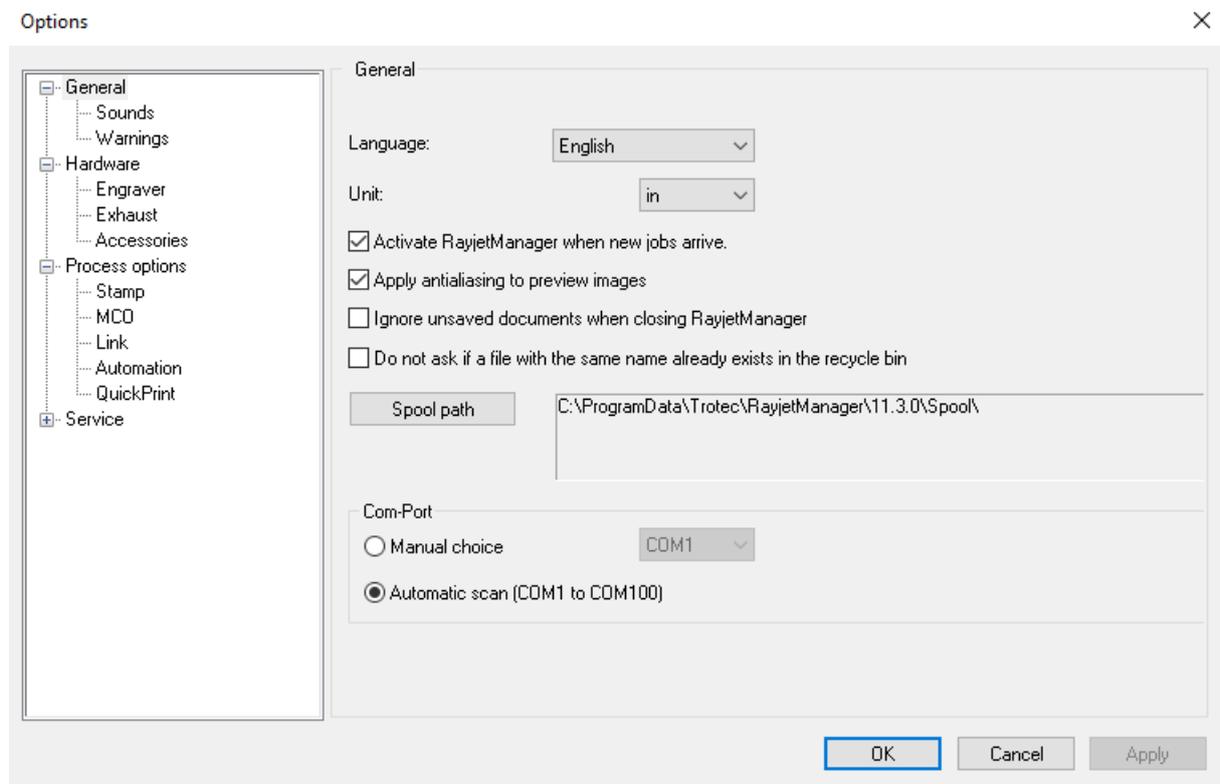
Restart the engraver after firmware update has been finished.

4.11 Options Dialog



Set the default values and functions for the laser machine.

4.11.1 General



Language: Defines the user interface language of the printer driver and RayjetManager

Unit: Indicates whether millimeter [mm] or inches [in] as default

Activate RayjetManager when new jobs arrive: RayjetManager starts when the Printer driver prints a Job.

Operation RayjetManager

Ignore unsaved documents when closing RayjetManager: RayjetManager can be closed without advice to save unsaved documents.

Apply antialiasing to preview images: with enabling this option the preview image quality is increased.

Do not ask if a file with the same name already exists in the recycle bin: RayjetManager will not ask if a job with the same name is deleted which already existed in the recycle bin.

Spool path: Path where jobs are placed from printer driver and loaded from RayjetManager

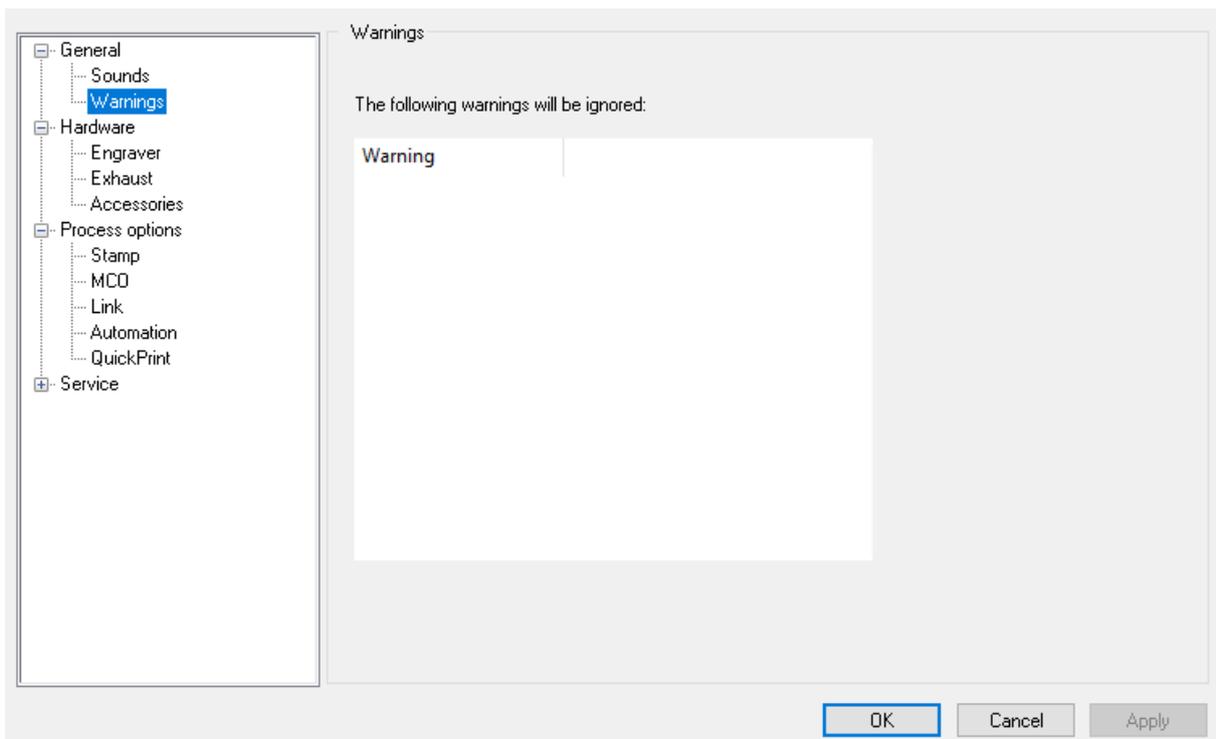
Com-Port: Manual choice: manually select com port for engraver connection (COM1, COM2...)

Automatic scan: detect COM port automatically (default)

- General – Sounds

User defined sounds inform whenever either „engraving finished“ or „machine error“ occurs. This is additional user information in case the PC is located in another room as the engraver. A sound card is required to use this feature.

General – Warnings



Operation RayjetManager

Ignored warnings are listed here.

4.11.2 Hardware

- Hardware – Engraver

Engraver Model: Defines the type of laser engraver used.



This information must correspond with the machine actually used. Changing the engraver model can result in faulty machine settings, bad engraving results or even machine damages!

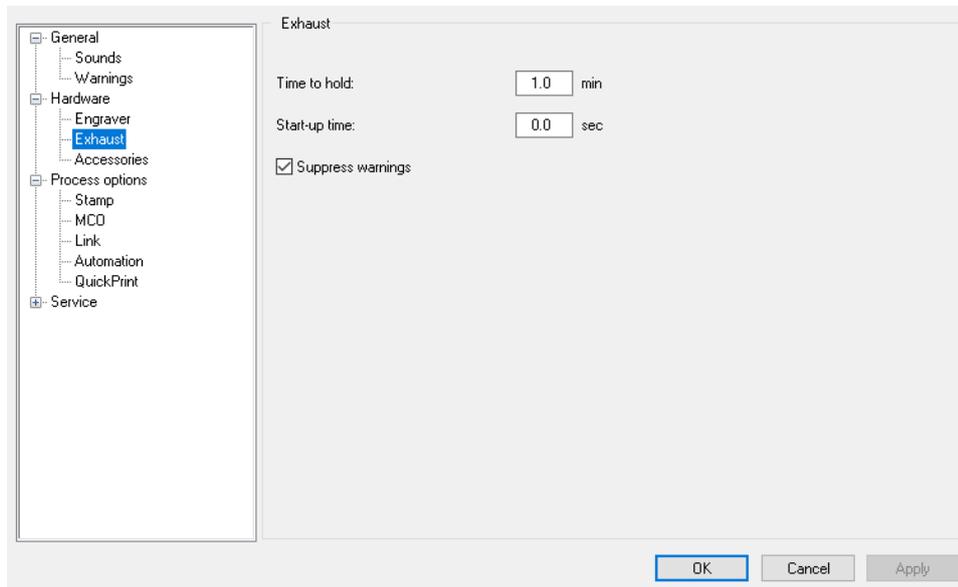
Max. Velocity: Indicates the maximum engraving and cutting speed possible. (Information field only, no changes possible)

Standby Mode: Switches the laser machine into standby mode after a defined period. Saves energy costs.

Operation RayjetManager

Fehler! Textmarke nicht definiert.

- Hardware – Exhaust



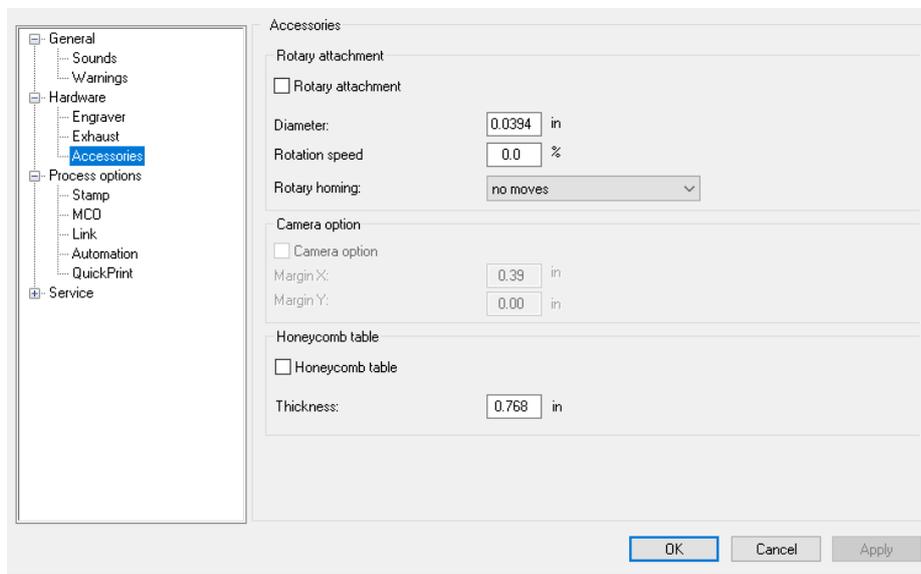
Time to hold: Defines the period how long the exhaust shall continue working after a job has been completed.

Start-up time: Allows the exhaust to start prior to processing jobs

Suppress warnings: Exhaust responses will not be displayed (used for Exhausts not originating from Trotec).

- Hardware – Accessories

Operation RayjetManager



Rotary Attachment: Activate or deactivate the option

Diameter: Specifies the diameter of the work piece

Rotation speed: Which portion of full speed is used for connection moves.

Rotary homing: Homing move configuration for rotary.

- **move to 0° on begin and end:** rotary moves to 0° before and after job has been finished
 - **no moves:** rotary doesn't move after job has been finished
 - **return to start position:** rotary moves to start position (position before job start) after job has been finished
- This page will be automatically completed when positioning a job that has been printed using the "Rotary Attachment" option. However settings can be adjusted here. Changes are only possible when no job is positioned on the plate.

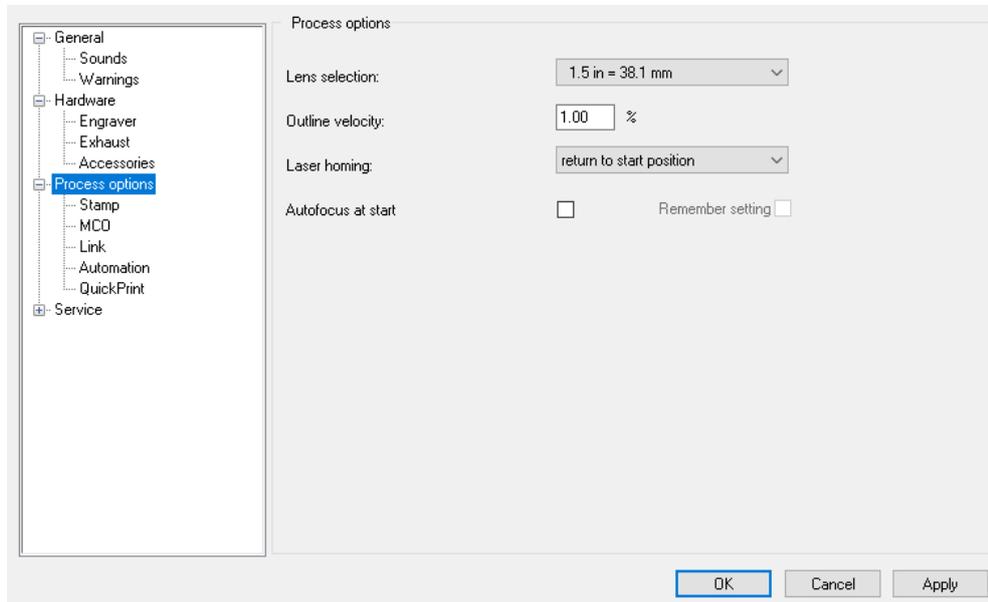
Honeycomb table: Activate or deactivate the option.

Thickness: Specifies the thickness of the honeycomb table. This value is used for calculation of the software focus. Wrong values can lead to head crashes.

When tickling "use honeycomb" is enabled you can then add thickness to the table.

Operation RayjetManager

4.11.3 Process options



Lens selection: Shows current lens selection

Outline Velocity: Defines velocity in percent of maximum engraving velocity for the outline functionality.

Laser homing: Defines the laser position before and after job execution (not for rotary jobs)

- **move to (0,0) on begin and end:** laser head moves in the top left position (0,0) before and after job has been finished
- **no moves:** laser head does not move after job has been finished
- **return to start position:** laser head moves to start position (position before job start) after job has been finished

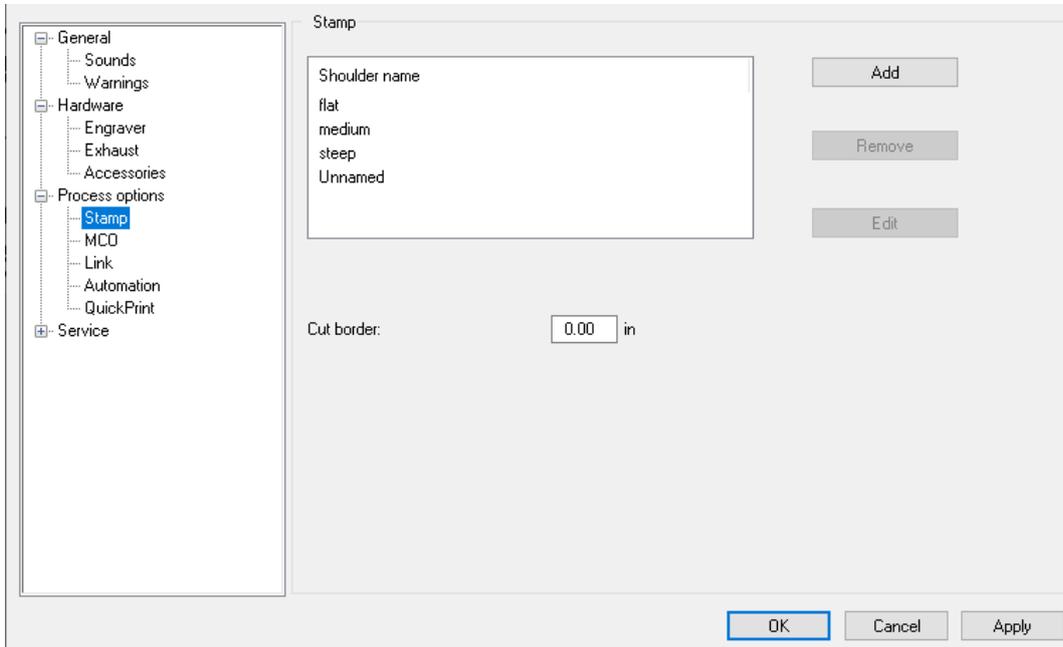
Autofocus at start: If activated a software autofocus is executed before job start. By default, this setting is cleared when JobControl is closed.



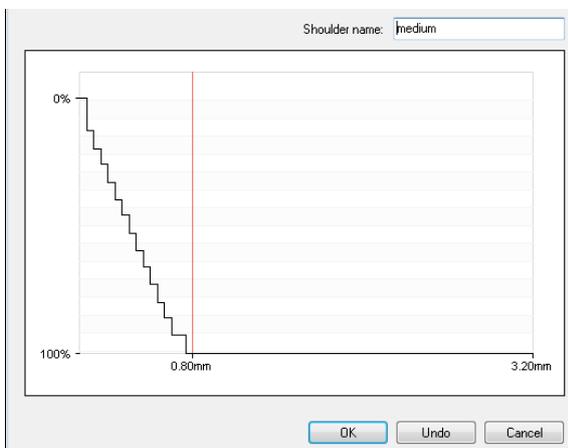
Lens type, material thickness and table (cutting table...) must be adjusted correctly to avoid head crash. Never put any parts of your body inside the engraver while the table is moving!

Operation RayjetManager

- Process options – Stamp



Shoulders: All shoulders are listed by their name and can be added, removed or edited:



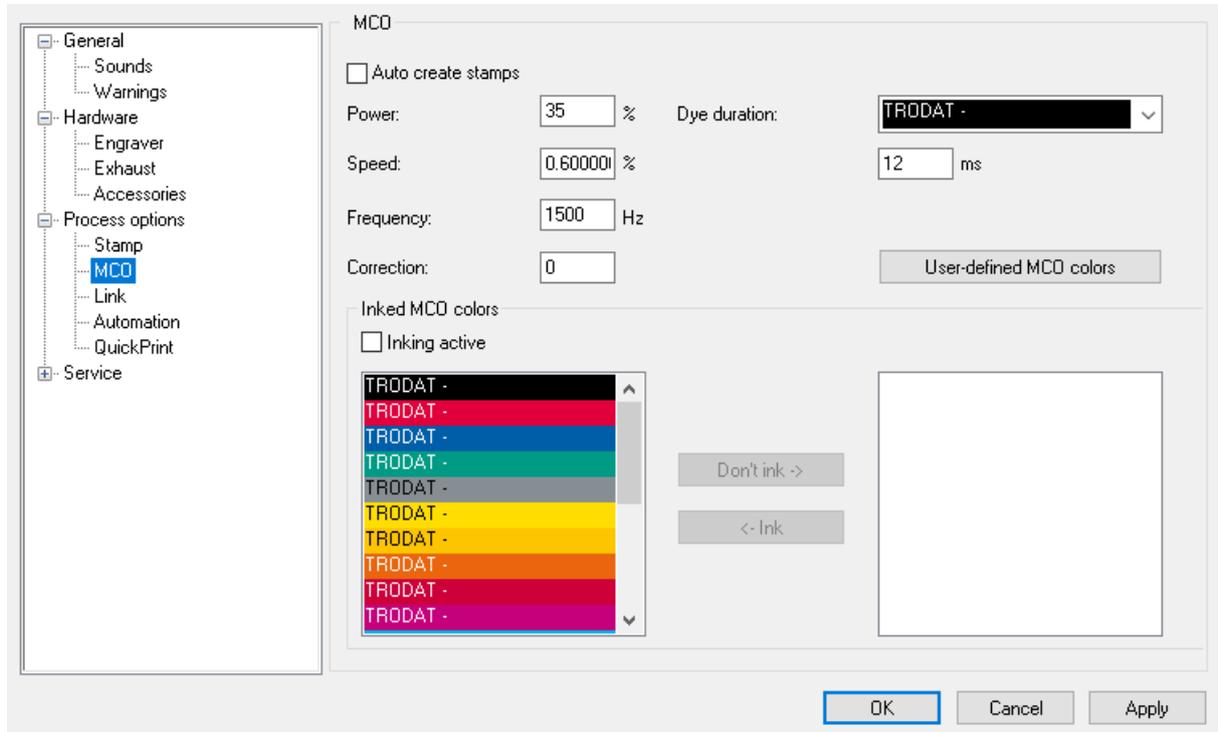
Cut Border: Distance between cutting line and neighboring job



These settings are required for stamps and should only be changed after consulting Trotec Technical Support.

Operation RayjetManager

- Process options – MCO (Multi Color Option)

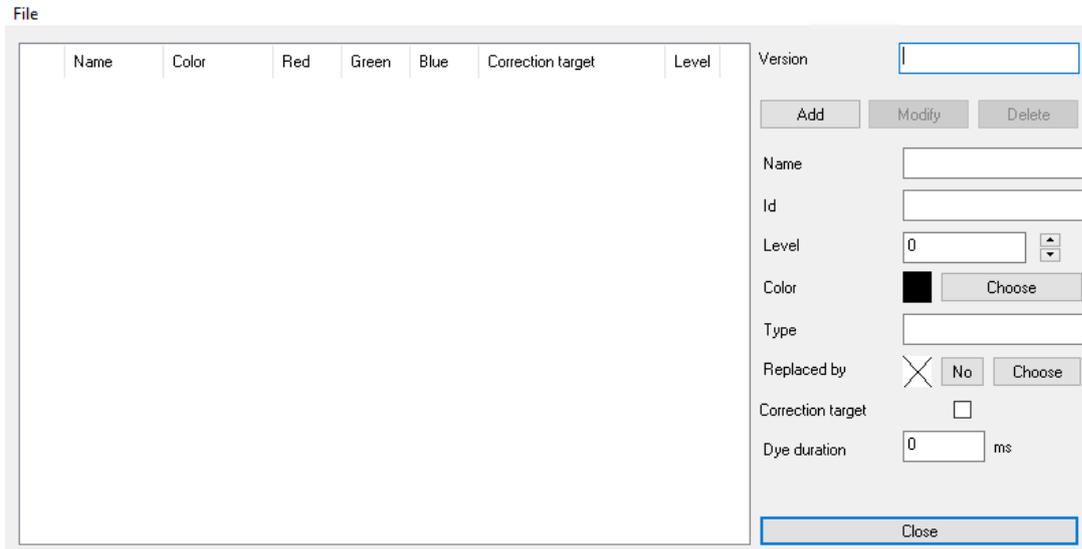


Auto create stamps: Automatically create stamps when MCO jobs are processed

- **Power, speed, frequency, correction:** Laser settings for cutting pads of MCO jobs
- **Dye duration:** The time each MCO color is inked
- **Used MCO colors:** Configuration whether inking is active and which MCO colors are used

Operation RayjetManager

- User defined MCO colors:



User can add, modify and delete his own MCO colors.

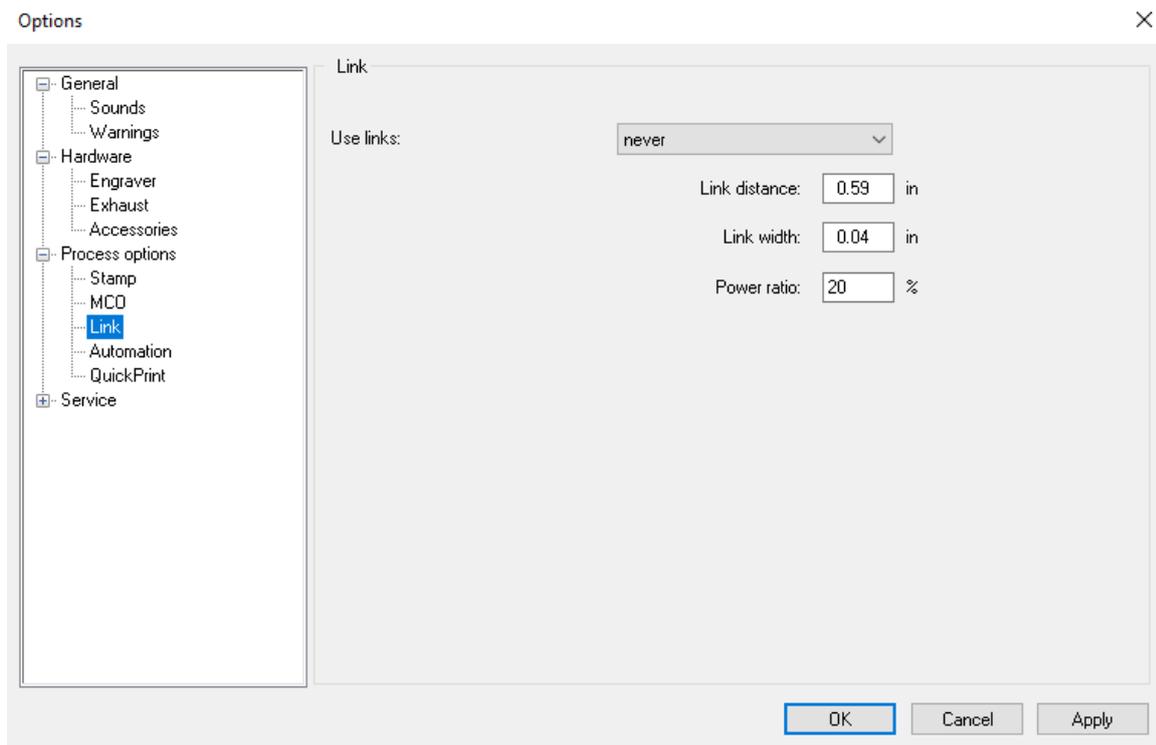
- **Version:** Version of all MCO user colors / MCO user colors file
- **Name:** Name of MCO color
- **Id:** Id of MCO colors (usually "Red|Green|Blue" value)
- **Level:** Field for future use
- **Color:**



Shows assigned RGB color

Operation RayjetManager

- **Choose:** Shows RGB color configuration dialog
 - **Type:** Field for future use
 - **Replaced by:** Shows MCO color which replaced this one
 - **Correction Target:** Whether this MCO color can be corrected to at time of MCO processing
 - **Dye duration:** Time how long one dye point is inked
- Process options – Link



Links are controlled cut-line interruptions. They are used to hold e.g. stamp dies in the sheet material. That way the entire rubber sheet can be removed conveniently after processing.

The distance from one link to another, the link width and the percentage of currently adjusted laser power can be modified.

Use links:

- never: don't use links with
- stamps only: use links only for stamp cutting processes (recommended)
- always: use links for all cutting processes
- once only: use links for the next job, then link configuration is changed to never

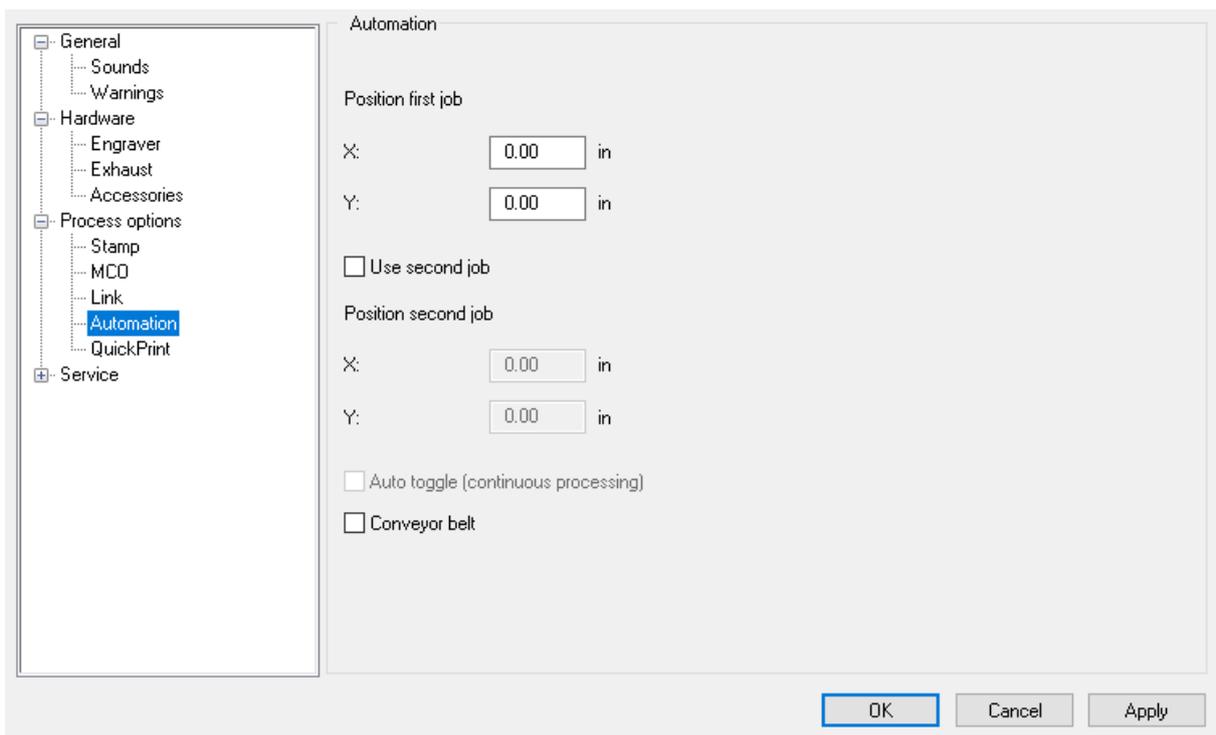
Operation RayjetManager

Link distance: distance between links

Link width: link width

Power ratio: power ratio in percent of max power

- Process options – Automation



The following settings influence the automation feature which can be started within right mouse click menu in job queue.

Position first job: Define automation job position

Use second job/Position second job: Not supported in RayjetManager

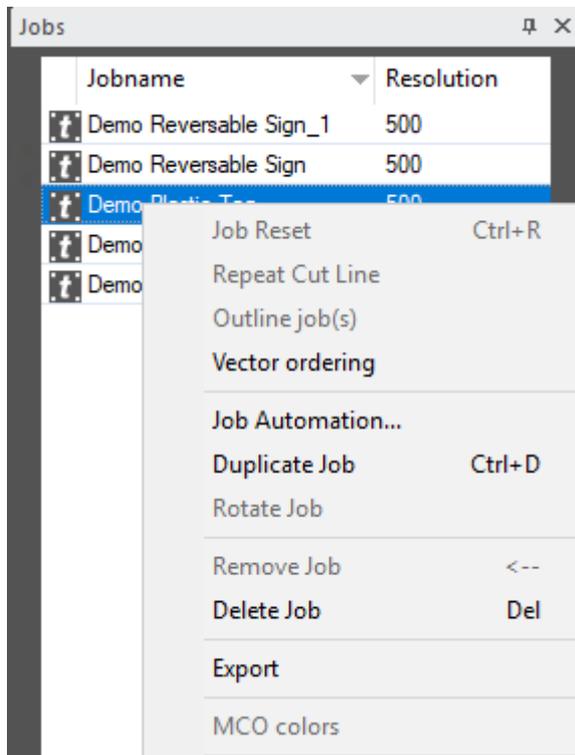
Auto toggle (continuous processing): Not supported in RayjetManager

Conveyor belt: Not supported in RayjetManager

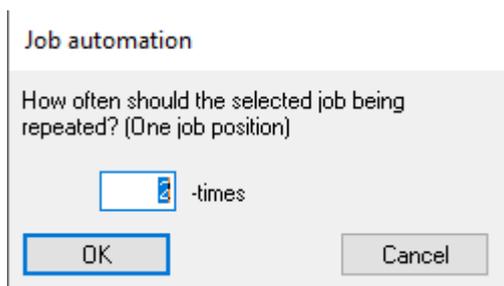
Operation RayjetManager

- Start Job Automation

Empty the RayjetManager plate, and then open the context menu of the job in the job queue



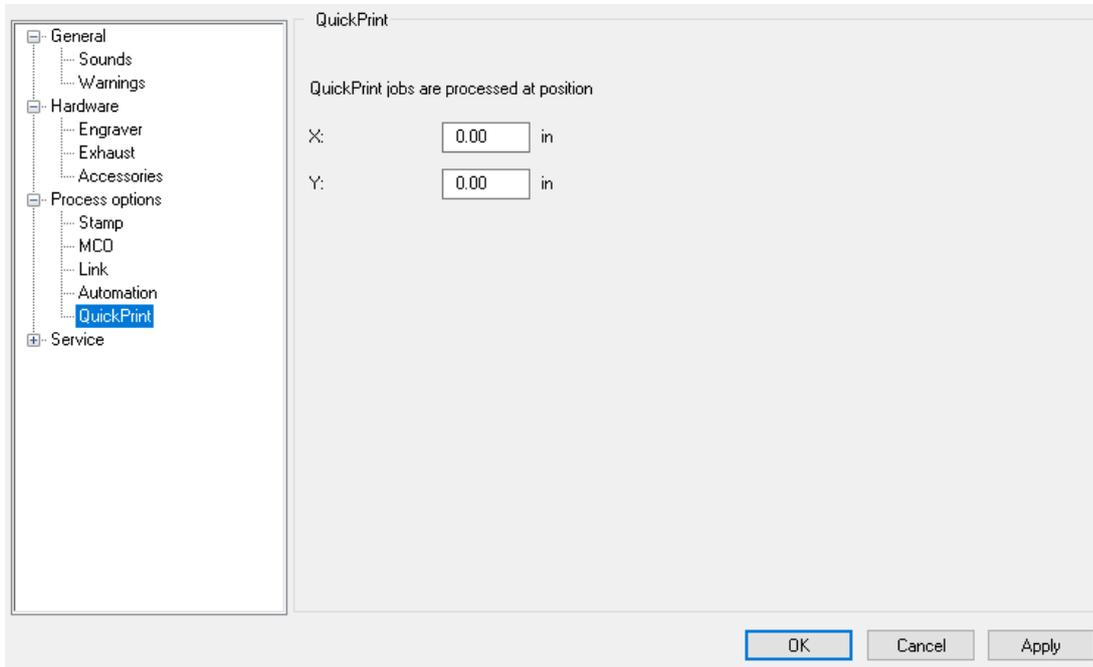
Click on Job Automation



Enter how often the job should be processed

Operation RayjetManager

- Process options – QuickPrint



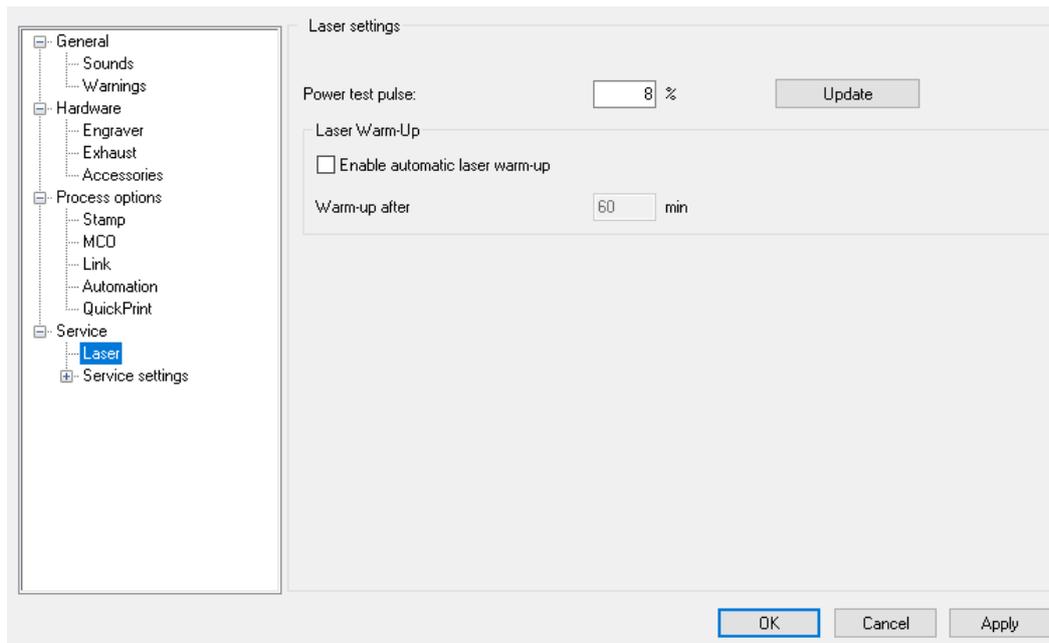
X, Y: Position where QuickPrint-Jobs are placed and processed

Operation RayjetManager

4.11.4 Service

Settings for service personnel only!

- Service – Laser



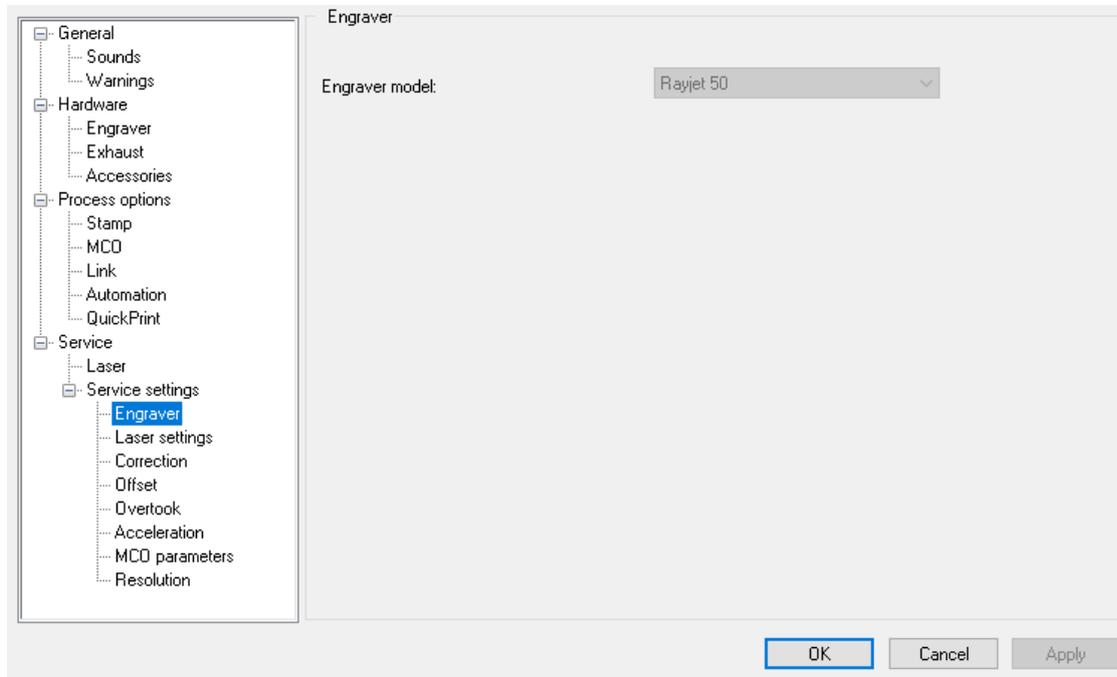
All laser parameters may only be changed after consulting Trotec Technical Support staff!

Power Test Pulse (only CO2 systems): Sets the test pulse power, only required during service!! If this value is set to 100%, it is the instantaneous power; otherwise the laser power increases continuously.

Laser Warm-Up: Automatic laser warm up for CO2 systems. This setting helps the laser source to work properly after a longer period of inactivity

Operation RayjetManager

Service – Service settings – Engraver



Engraver model: Here the engraver model can be changed.

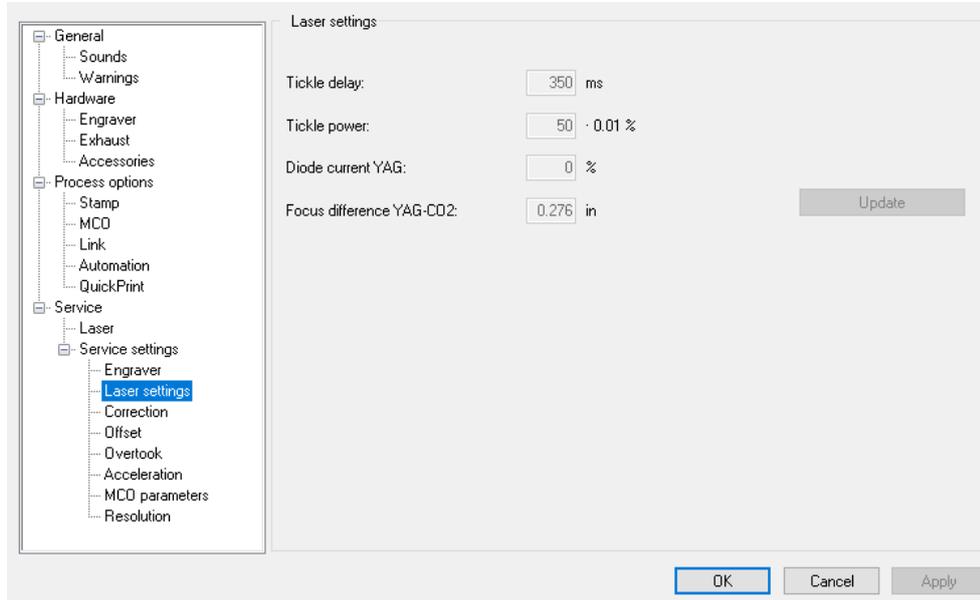


Connecting the JobControl® with machines other than the one for which it was adjusted may lead to lower quality in cutting and engraving.

Also the offset settings of the machine and lenses have to be readjusted!

Operation RayjetManager

Service – Service settings – Laser settings



Tickle delay (only CO2 laser systems): Should be increased if the stamp appears blurred.

Tickle Power (only CO2 laser systems): Power required to excite the laser tube and put it into standby mode

Update: Writes the changed values to the engraver's memory

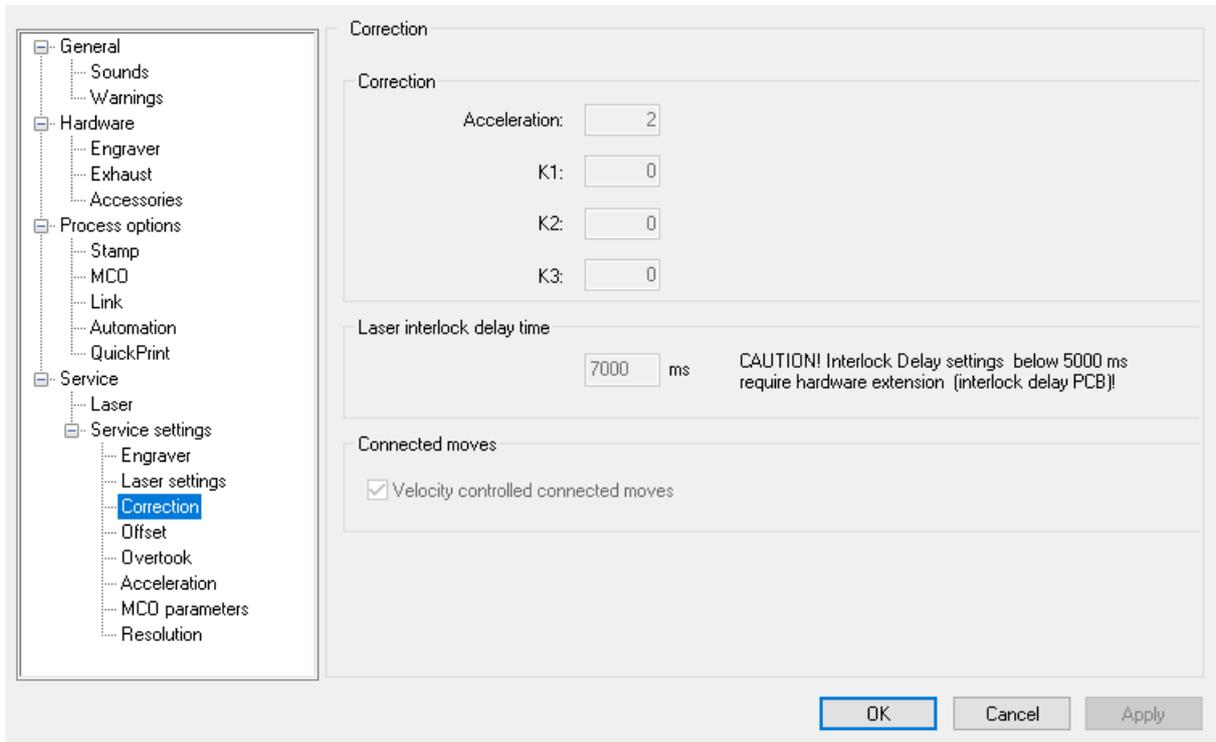
Diode Current YAG: (only YAG/fiber laser systems) Threshold current of the laser.

Focus difference YAG-CO2: Only for hybrid systems

Automatic focus mode: The Speedy 360 is shipped with either Light bar focus or Sonar Technology™. SP2000 and SP3000 are shipped with Sonar Technology™. Some engraver systems do not have a machine focus.

Operation RayjetManager

Service – Service settings – Correction



Acceleration, K1, K2, K3: Values which influence graving quality

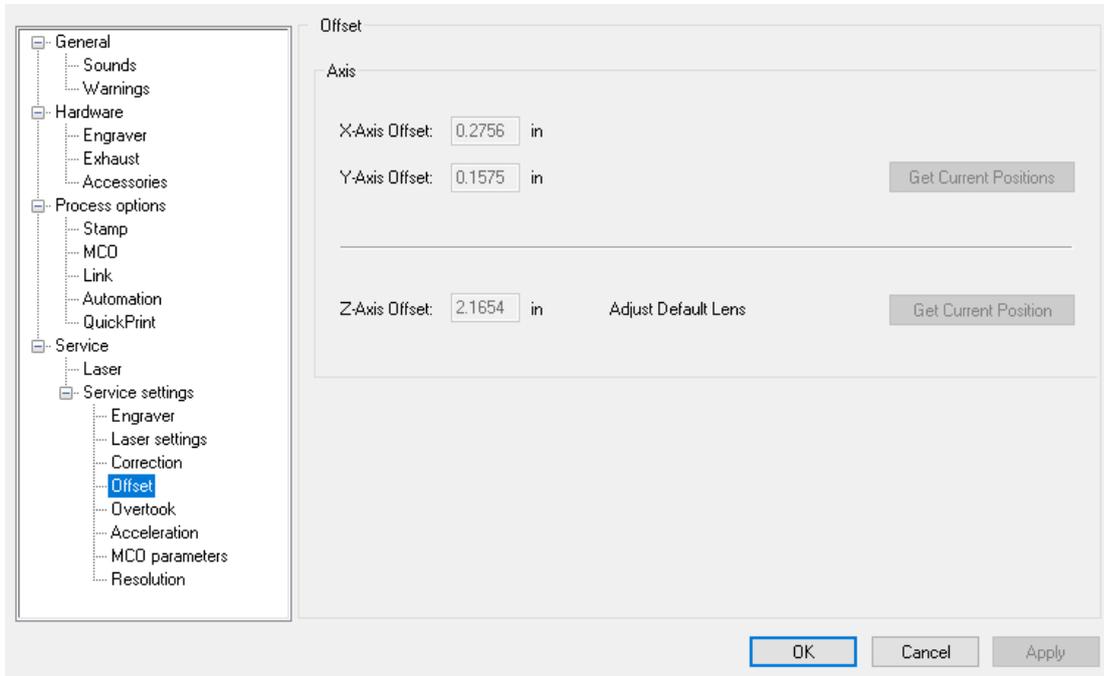
Laser interlock delay time: Time the laser becomes active after the lid was closed. Settings below 5000 ms require a special hardware extension.

Velocity controlled connected moves: Enable/disable velocity control in firmware.

The function "velocity controlled connected moves" is removed from option dialog as soon as there is a path planning in use. Then the path planning is taking care of the acceleration along the path.

Operation RayjetManager

- Service – Service settings – Offset



■ Group Axis

X-Axis offset, Y-Axis offset, Z-Axis offset: Offset values which modify shown X, Y and Z values.

Get Current Position(s): Use current position of laser or table as offsets.

■ Group Lens

Lens type: For each lens type an offset value can be entered. This will make automatic focus mode more accurate for each lens.

Default: The calculated difference between default lens (which is used to adjust the Z-Axis Offset) and chosen lens.

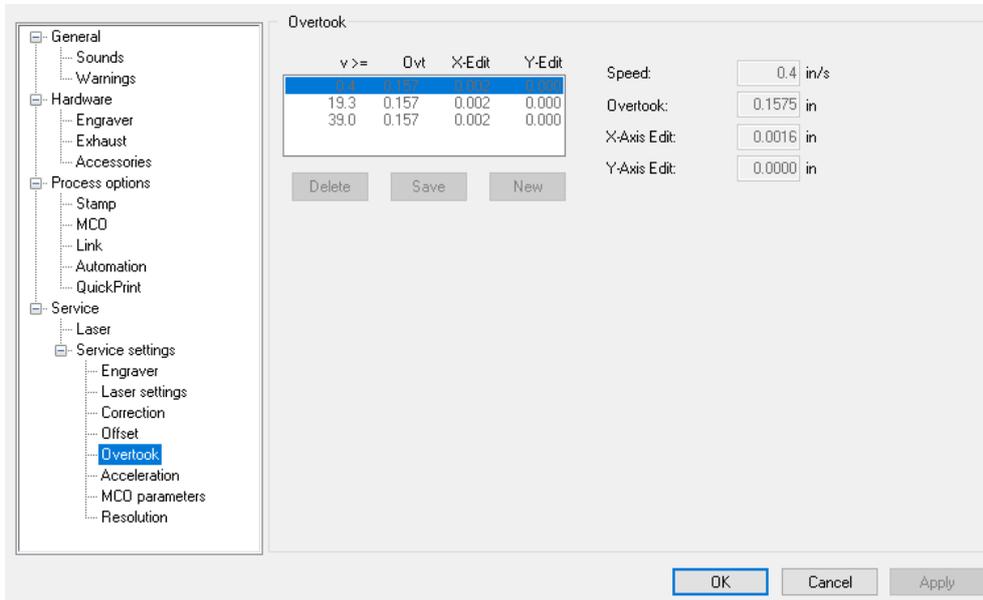
Corrected: The measured difference between default lens and chosen lens.

Get Current Position: Use current position of laser or table as offsets.

The group "Lens" is only shown is an engraver is chosen that has a table that can move in z-axis. It is not shown if the offset can be changed inside the laser head.

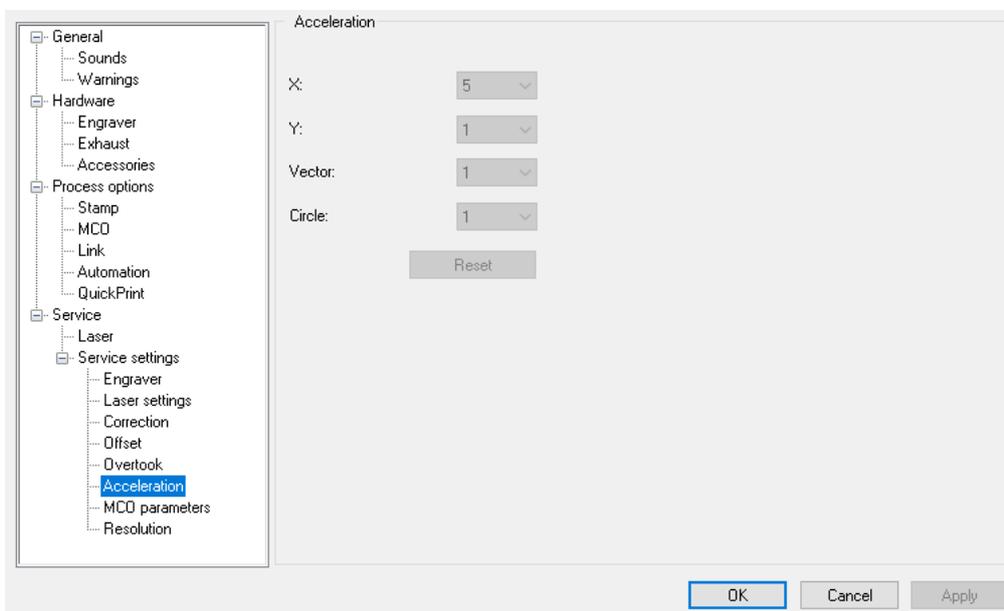
Operation RayjetManager

- Service – Service settings – Overtook



Show and edit correction values for overtook

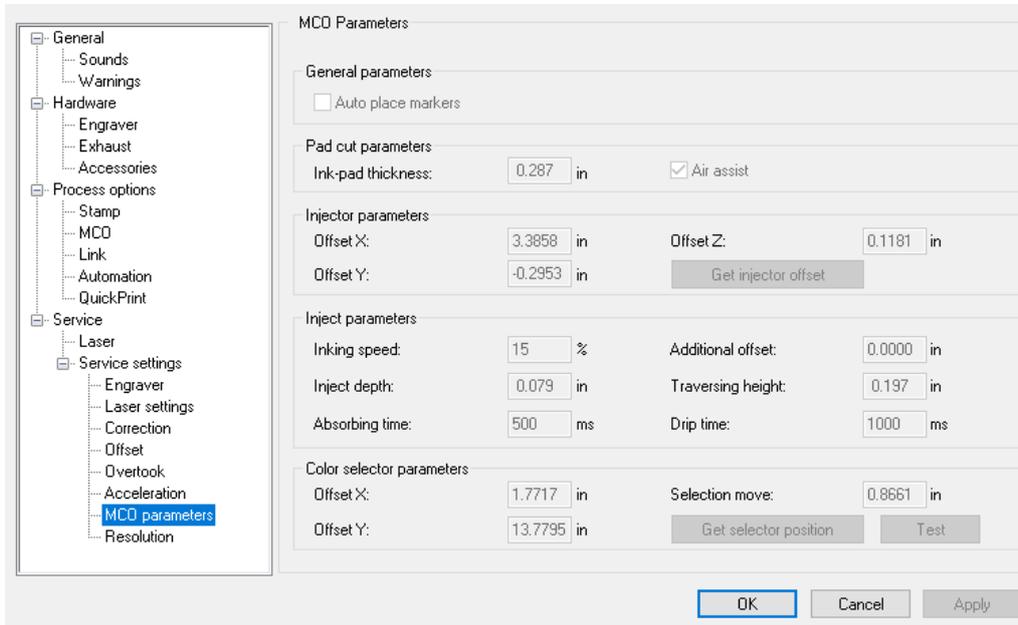
- Service – Service settings – Acceleration



X, Y, Vector and Circle values for acceleration. Click “Reset” to restore Default Acceleration settings for engraver. If the chosen engraver supports path planning, this page is not shown since the path planning parameter are taking care of acceleration.

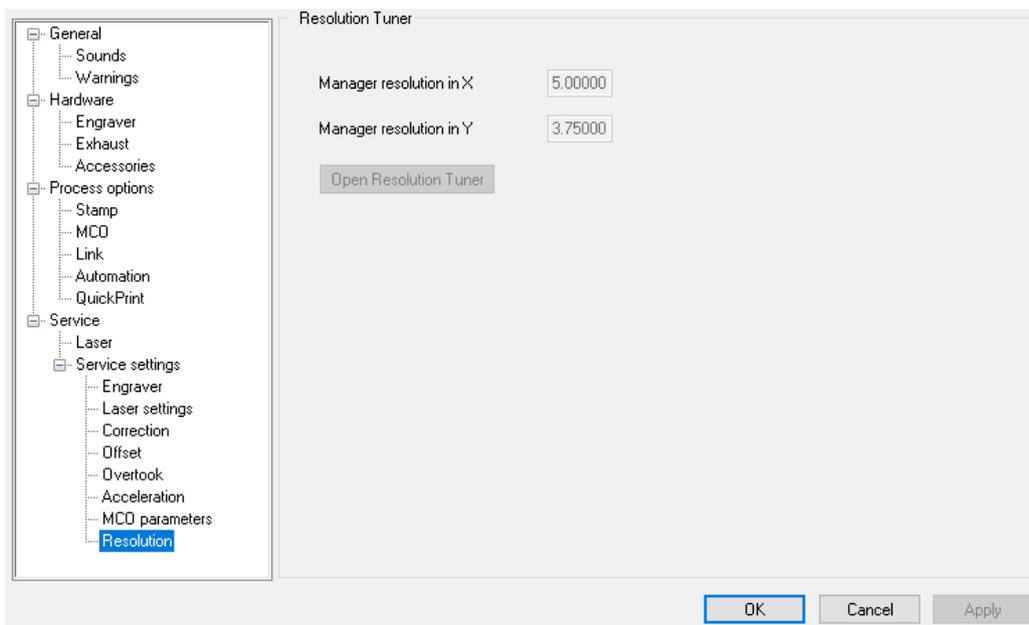
Operation RayjetManager

- Service – Service settings – MCO parameters



The MCO dialog is only shown if the chosen engraver supports the multi color option.

- Service – Resolution



The Resolution Tuner can be used to change the resolution inside RayjetManager and the Trotec laser that is operated by RayjetManager.

Operation RayjetManager



As soon as the Resolution Tuner connects with the engraver the connection of RayjetManager will close.

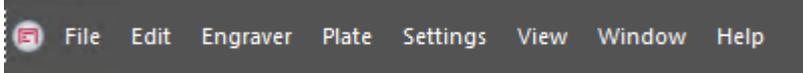
The resolution can be changed by sliding the control. This can also be done by using the arrow keys, the step size will be hundredth percent.

The change in the resolution is shown in the field for x and y resolution. The unit is nanometer.

If the RayjetManager or the firmware is updated the changed resolution is lost. Therefore, the resolution tuner needs to be opened again and the stored values must be sent to the laser.

Operation RayjetManager

4.12 View

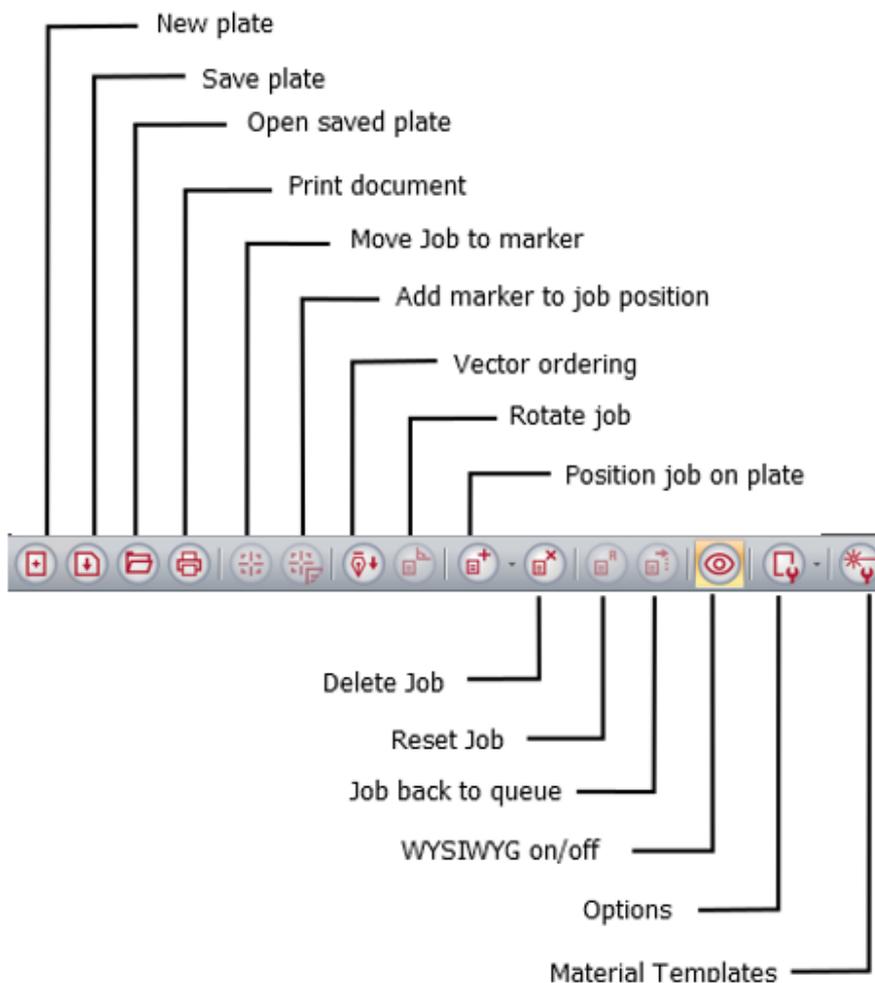


4.12.1 Status Bar

General information such as the preset material of the active plate is displayed in the status bar.

4.12.2 Toolbar RayjetManager

The toolbar provides quick access to commonly used functions.

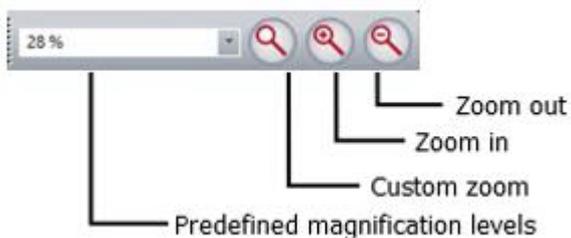


Operation RayjetManager

4.12.3 Zoom

The zoom bar enables you to display the plate at the magnification you want. You can use the scroll bars to the right of and beneath the plate to navigate within a magnified plate.

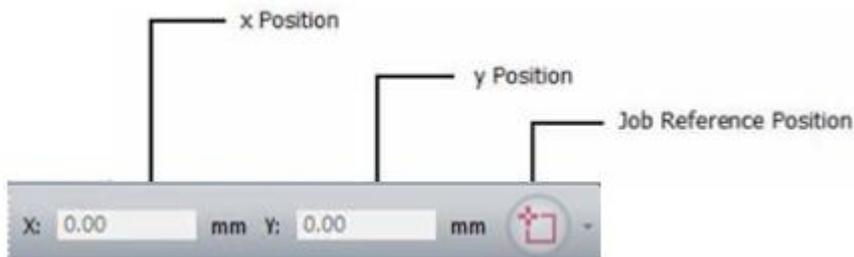
The function keys F3 and F4 provide quick access to Zoom Out and Zoom In.



4.12.4 Job Position

The job position bar provides information on the X and Y position of a marked job on the plate. Precise job positioning is possible by manual entry of the required coordinates.

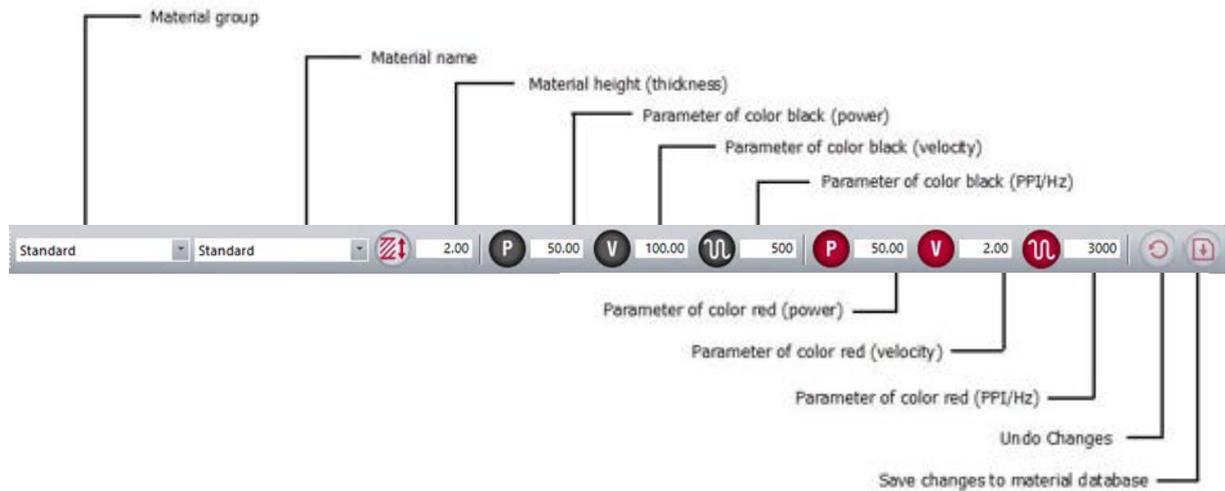
Depending on reference selected, the coordinates are either displayed in one of the corners or center of a job.



Operation RayjetManager

4.12.5 Material Parameter

The material parameter bar displays the main properties of the currently active material. All parameters may be changed. You can undo or save changes using the two buttons on the right.



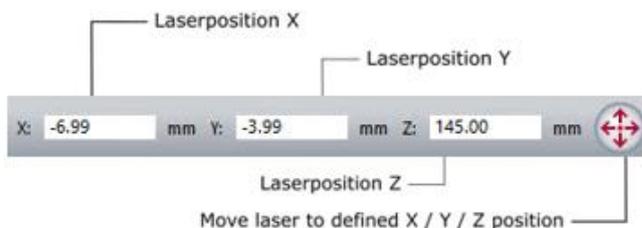
Changes to power, speed, and PPI/Hz will have an effect on processes being currently in progress with a slight time delay. It is necessary to confirm the change to the value by using the Tab or Return key.

Should be entered correct as soon as a material has been changed. The software autofocus is calculated with this value!

4.12.6 Laser Position

Display of the X, Y and Z axis position.

The Move X/Y/Z button allows moving to any entered absolute position. Focus Laser moves the table to the focal point, with consideration to material thickness, lens and honeycomb table.



Operation RayjetManager



Never press any move-button or Focus Laser button while someone's bodily parts are inside the engraver! Never put any bodily parts inside the engraver while the table is moving!

4.12.7 Lens Toolbar

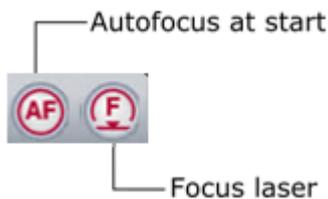
The lens that is used should be entered here. Some offsets might be used by lens. The number of lenses shown here is dependent of the engraver in use.



4.12.8 Software Autofocus Toolbar

The tool bar for the software autofocus includes

- The button to activate software autofocus at job start
- The button for software autofocus



When using software autofocus be aware to have your material thickness up to date. Otherwise the software autofocus may lead to a head crash!

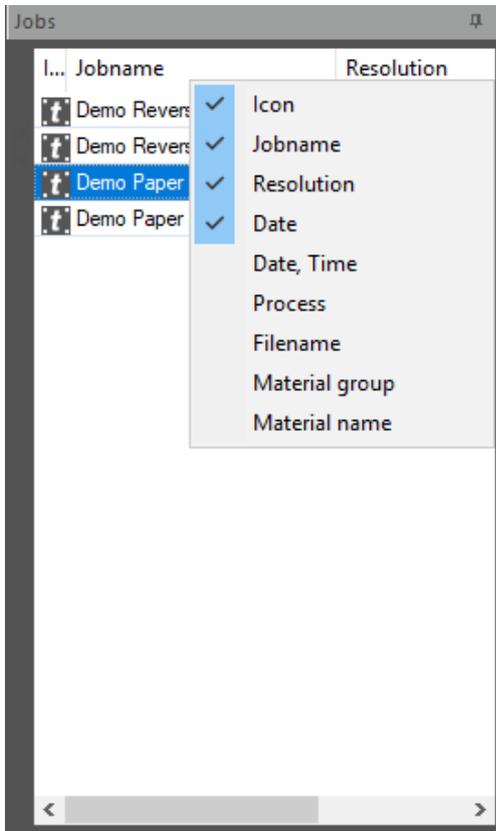
4.12.9 Job Queue

The Job queue displays all jobs which are printed but not positioned on the plate. They are listed in alphabetical order optionally by any columns.

You can sort every column with click on the column name. To sort all jobs with their Job name click on Job name with the mouse.

It is possible to modify the columns of the job queue with right mouse button click.

Operation RayjetManager



Icon

Shows the icon of the Job process.

Job name

Shows the job name of the print job. Job name has been defined with printing process.

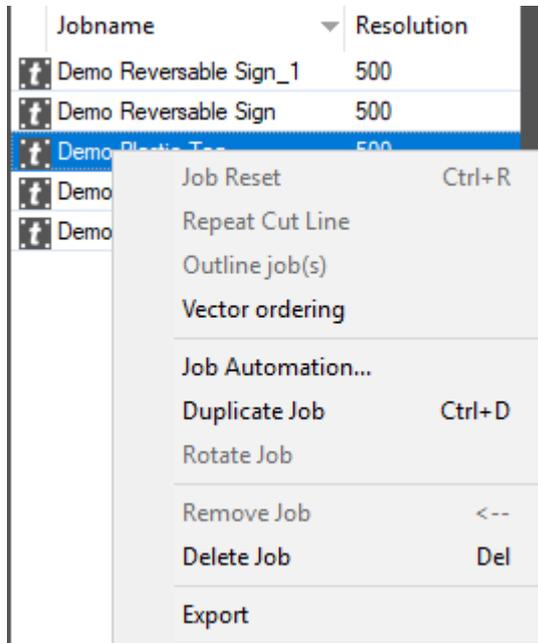
Resolution

Shows the printing resolution in Dots-per-Inch (DPI). Resolution is defined with printing process.

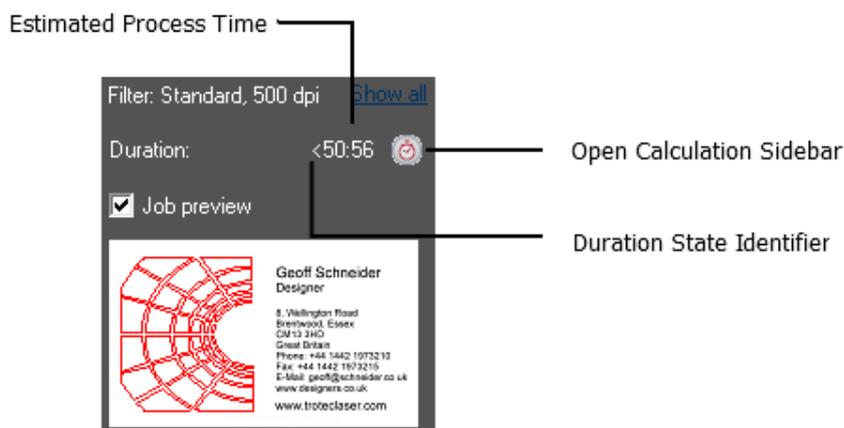
- Date: Date format: system region settings dependent (e.g.: mm/dd/yyyy)
 - Date, Time: Date format: system region settings dependent (e.g.: mm/dd/yyyy hh:mm)
 - Process: Standard, Stamp, Layer, Relief, Photo optimized...
 - Filename: *.tsf filename of printing job
- If a job from the job queue is positioned on the plate, the Filter settings are set to the Resolution of the positioned job.

Operation RayjetManager

Export Jobs: Export jobs from within the job queue or plate, by using the context menu. Exported jobs are stored in compressed format (ZIP).



4.12.10 Engrave Time Calculation



Duration calculation estimates the process time of the selected Job in the queue or on the plate. The estimated time is an indication for the process time but must not meet the real process time.

To get an improved process time forecast open the calculation sidebar and click on Update.

Operation RayjetManager

Calculation Sidebar

For improved calculation please open the calculation side bar and click on update. This calculation can take a while if the job is very complex.

Calculation

Type	Idx	Timing
	1	<4:14
	2	<2:01

Total: 6:15

Plate Count: 1

Handling Time: 0

Production Time: 6:15

Demo Plastic Tag.tsf

Update

Calculation Job Properties Vectors

Process Time Estimation

Calculation

Type	Idx	Timing
	1	2:41
	2	0:12

Total: 2:53

Plate Count: 1

Handling Time: 0

Production Time: 2:53

Demo Reversible Sign.tsf

Update

Calculation Job Properties Vectors

Process Time Calculation

Operation RayjetManager

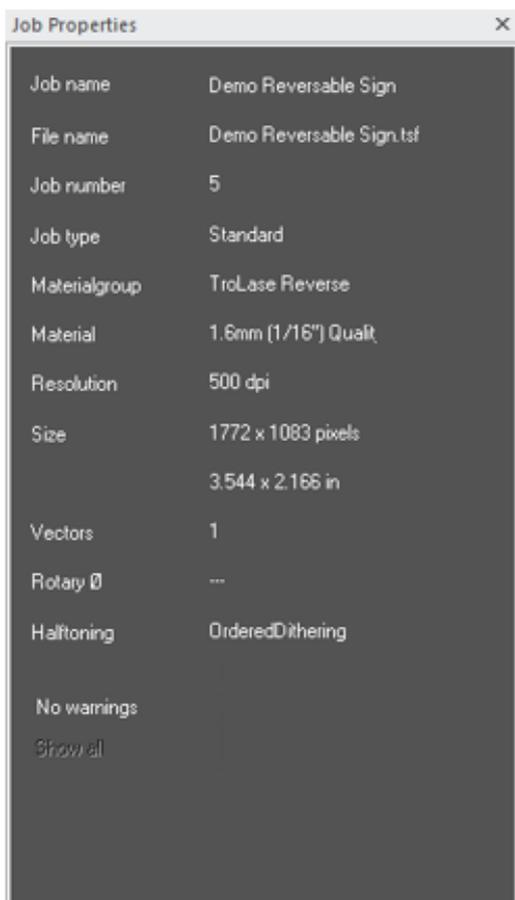
The maximum error between estimated process time and real process time could be more than 100 percent. Only a rough upper bound for the process time has been estimated. The maximum error between calculated process time and real process is 10 percent. The duration state identifier signals the state of the calculation:

< The process time is estimated. Only a rough upper bound for the process time has been estimated.

* The process time has been calculated but the process parameters have been changed so the process time must be calculated again. If there is no character in front of the process time the calculation has been executed and calculation time is up to date.

4.12.11 Properties

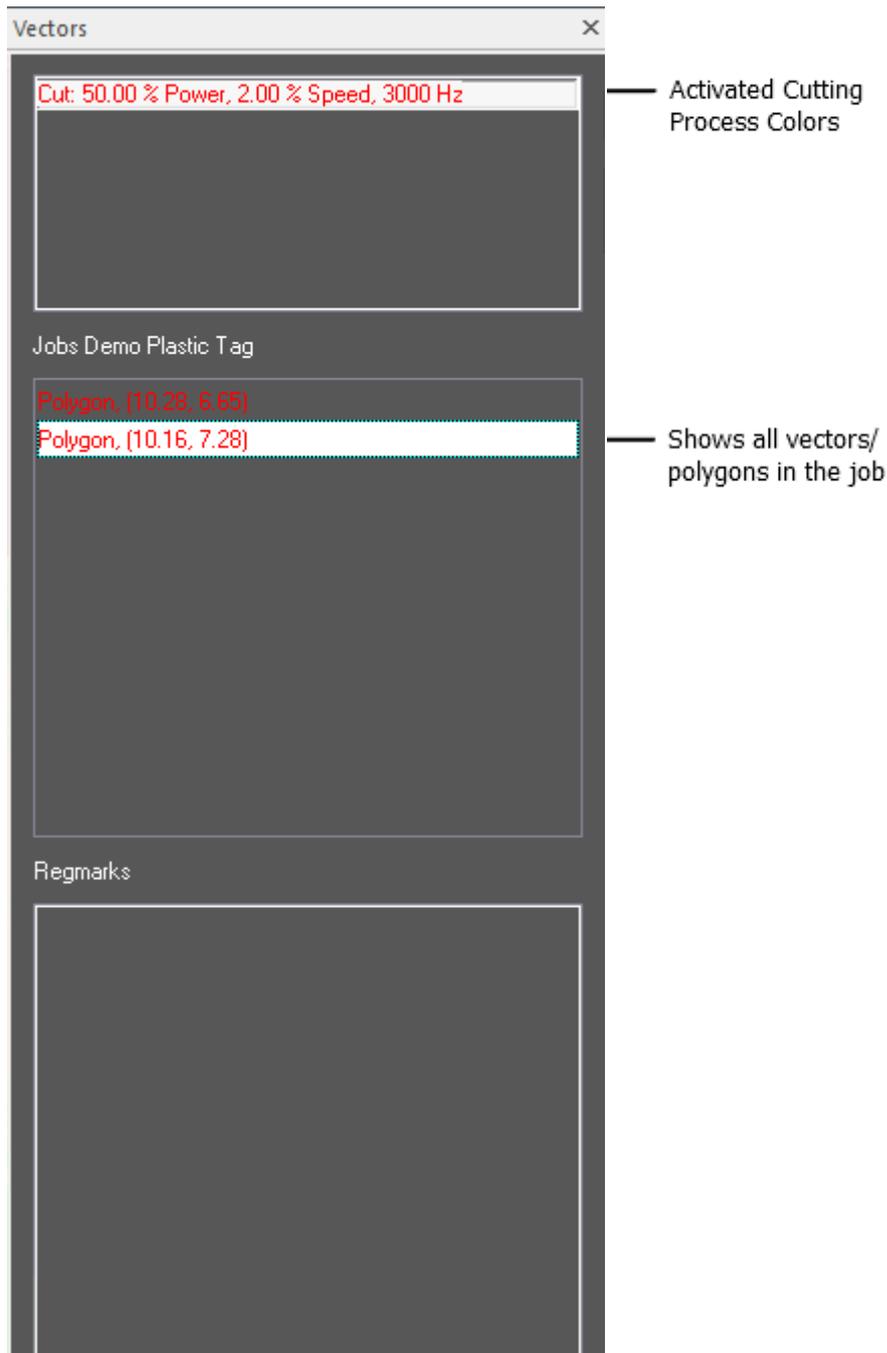
Opens the Job Properties Sidebar which shows import info about the selected job on the job queue or plate. The properties include order name, order number, file name, and processing parameters.



Operation RayjetManager

4.12.12 Vectors

Shows all vectors in the job.



Operation RayjetManager

4.12.13 Job History

ID-Number	Date	Start	Duration	Jobname	Jobnumber	Filename	Kind	dpi	Power
1	2012-10-22	16-15	00-00-18	blah	64	blah.tsf	Standard	500	50.00
2	2012-10-22	16-16	00-00-20	blah	64	blah.tsf	Standard	500	52.00
3	2012-10-22	16-16	00-00-17	blah	64	blah.tsf	Standard	500	52.00
4	2012-10-23	09-52	00-00-23	5206Segment.cdr	2220	1-14480265-1-240694	MCI Pad	500	50.00

List of all jobs processed with date, processing time, job name, job number, filename, kind, dpi and power. The user may use the list to create statistics or for calculations.

An inbuilt export function creates a file, if required, which can be opened and edited with Microsoft Excel® for example.

4.12.14 Recycle Bin

Job	Deleted at
Graphic1 0001.tsf	17.10.12 08:51:54
Graphic1 0002.tsf	17.10.12 08:53:49
Graphic1 0003.tsf	17.10.12 08:54:04
test_1.tsf	19.10.12 13:08:59

Dialog for showing and undeleting already deleted jobs

Operation RayjetManager

4.12.15 WYSIWYG on/off

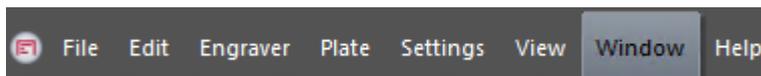


If WYSIWYG is activated all jobs on the plate will be displayed with their graphic contents. This makes positioning easier and helps searching for jobs.

Cutting lines are only displayed if the appropriate color is activated for cutting. This is also used to check if unwanted cutting lines may exist.

- **With less powerful computers or the display of large complex graphics, image formation may take some seconds. In these cases, it may be useful to deactivate the WYSIWYG function to ensure fast processing.**

4.13 Window



New Window

Opens a new window for the current document.

Cascade

Arranges the windows so they overlap.

Tile

Displays the windows side by side.

4.14 Help

Help F1

Opens software manual (PDF Reader has to be installed).

Laser Manual

This option opens the Operation Manual for the engraver (PDF Reader has to be installed).

What's New?

Shows RayjetManager Release Note (PDF Reader has to be installed)

Operation RayjetManager

User Registration

Register your RayjetManager

Software Registration

This option allows updating the software to different view levels and options.

Rayjet on the web

<http://www.rayjetlaser.com>

About RayjetManager

Displays program information, Version number and copyright.

Start Teamviewer

Opens a TeamViewer window that displays the ID for the following session. TeamViewer is used by the technical support service to trace problems on the customer computer.

List of available shortcuts

5 List of available shortcuts

Function Key	Description
F1	Help
Ctrl + -	Zoom Out
Ctrl + +	Zoom In
Ctrl + 0 Shift + F4	Zoom to Plate
Alt + 0 F4	Zoom to Jobs
F8	Marker to Laser
Ctrl + N	New Plate
Ctrl + O	Open Plate
Ctrl + S	Save Plate
Ctrl + P	Print
Ctrl + A	Select all Jobs on Plate
Ctrl + R	Reset selected Jobs
Ctrl + G	Start
F12	Start

List of available shortcuts

Ctrl + F	Pause
Ctrl + E	Stop
Ctrl + H	Plate Setup
Ctrl + D	Duplicate Job (either on plate or in job queue)
Del	Delete Selected Job(s)
Ctrl + Del	Delete Selected Marker
Ctrl + M	Material Template Setup
Ctrl + W	Size Template Setup
← (backspace)	Put Job back in Queue
Ctrl + Space	Rotate Job
Ctrl + L	Connect to Laser
Ctrl + J	Options

Graphics Software

6 Graphics Software

6.1 Contours and Fills

The Rayjet Commander differentiates between raster mode (engraving) and vector mode (cutting) by the type of the graphics used and the selected process in the used material colors.

For laser cutting, set the line generated in the graphics program to the smallest line width possible.

Assign the color you want to this line – Red is very common – and chose a cutting process for the red color. The printer driver interprets these objects as vectors and cuts them.

If objects are to be cut, always be aware that the RayjetManager may interpret a contour which is too thick as fill.

If a thin red line is printed with engraving process for color red the resulting job does not include any vectors because the red lines are half toned and can only be engraved not cut.

If engraved and cut objects are combined, different colors are used for the fills and contours as engraving requires power values different to cutting. Objects to be engraved are therefore usually drawn with a black fill and cutting lines as red contours.

6.2 Image Processing Order

When cutting and engraving graphics, the laser carries out all engravings first and then all cuttings. All black filled objects for example are engraved first and then all red contours are cut. Unlike engraving, the cutting is done in the order the contours were drawn. There are two different ways to define the cutting order. You can either drawn them exactly in the order they should be cut or you select “Arrange” in the graphics program and place them “behind” the other objects with this function in order to cut the contour you want first. As a third option you can assign different colors from the Trotec material templates to the cutting lines. They will then be cut exactly in the order listed in the templates.

6.3 Overlapping Fills

If graphics contain overlapping black filled areas, the driver will automatically filter these so that these overlapping areas will not be engraved twice. The whole filled area of the object lying on top and only the visible part of the object located underneath are engraved. The end result is like a print view.

Graphics Software

White can be used as a very helpful drawing tool. As the laser does not engrave white areas (this is the background color), these can be used to block unwanted engraving areas from filled areas or bit-maps.

6.4 Overlapping Outlines

The PrinterDriver does not filter overlapping outlines. If one red outline is placed on top of another, both contours are cut by the laser. This is a helpful function, when thick materials are to be cut. To use this function, double an outline. Another possibility is to set the "Cut ... passes" option in the "Job" tab of the printer driver to "2". This function can also be set with the "Job Setup" menu command in the RayjetManager.

6.5 Hidden Vectors in Graphics

The RayjetManager does not automatically filter outlines, which are, for example, overlapped by objects such as fills. If hidden red outlines are located under a black filled area, the laser will first engrave the fill and then cut along the hidden outline.

6.6 Power Control through Color Selection

The RayjetManager® allows the selection of 16 different colors in the material templates to specify 16 different power levels during cutting or engraving. When using this function, the colors in the graphics program must match exactly the colors listed in the RayjetManager® (on using Corel draw make sure that color management is „OFF“). In some graphics programs these Basic colors are already predefined, with other programs, you must define each color separately with its RGB components first. If the 16 driver colors are not automatically available in the software, use the values in the following list:

Graphics Software

No	Color	RGB Color Model			CMYK Color Model			
		R Red	G Green	B Blue	C Cyan	M Magenta	Y Yellow	K Black
1	Black	0	0	0	0	0	0	100
2	Red	255	0	0	0	100	100	0
3	Blue	0	0	255	100	100	0	0
4	Desert	51	102	153	40	20	0	40
5	Cyan	0	255	255	100	0	0	0
6	Green	0	255	0	100	0	100	0
7	Grass	0	153	51	60	0	40	40
8	Forest	0	102	51	40	0	20	60
9	Olive	153	153	51	0	0	40	40
10	Brown	153	102	51	0	20	40	40
11	Walnut	102	51	0	0	20	40	60
12	Plum	102	0	102	0	40	0	60
13	Purple	153	0	204	20	80	0	20
14	Magen	255	0	255	0	100	0	0
15	Orang	255	102	0	0	60	100	0
16	Yellow	255	255	0	0	0	100	0

6.7 Bitmap and Vector Images

A bitmap is a pattern of points that form a picture similar to the ones in newspapers. Bitmaps can be generated by scanning of pictures or by drawing in a bitmap processing program. In the bitmap format thicker lines and surfaces are also represented as individual points.

There are two major kinds of bitmaps: monochrome and gray-scale bitmaps. Monochrome bitmaps are 1-bit black-and-white pictures (scanned line drawings), gray-scale bitmaps are 8-bit pictures (scanned photographs).

6.8 Scanning of Pictures

When scanning black-and-white pictures, select a high dpi resolution as the pictures turn out sharper. 300 dpi is the recommended minimum resolution to scan line drawings (monochrome bitmaps), but usually 600 dpi provides a much higher image quality. Gray-scale bitmaps should always be scanned at 300 dpi. Scanning with more dpi does not provide better image quality and needs more memory. As

Graphics Software

a rule-of-thumb photographs should be scanned with 300 dpi and line drawings with 600 dpi. Don't hesitate to experiment with different scan resolutions and note the results.

There are different bitmap data formats as e.g. TIF, BMP or PCX. The format makes no difference to the printer driver. The difference lies in the way bitmaps are stored on the hard disk of your computer.

6.9 Image tracing

Most graphics programs cannot edit bitmaps directly. Some Basic functions as zooming in and out or mirroring may be possible, but individual image pixels cannot be altered. For this purpose a special image processing program is required e.g. Photo Shop®.